University of Alberta

Variability, Historical Contingency, and Cultural Change in Northern Archaeological Sequences

by

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Canada

To the memory of my parents, Helen and Donald Sutherland.

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Table of Contents

1. Introduction 1

Theoretical Approaches to the Archaeology of Northern Canada 1

Diversity and History..4

Implications for Northern Archaeology 7

References Cited..10

2. Environmental Change and Prehistory in Arctic Canada

(Originally published in *Arctic Environment: Past, Present & Future*, edited by M.K. Woo and D.J. Gregor, pp. 139-153. McMaster University, Hamilton, Ontario, 1992). 14

3. Continuity and Change in the Palaeo-Eskimo Prehistory of Northern Ellesmere Island

(Originally published in *The Paleo-Eskimo Cultures of Greenland*, edited by Bjarne Grønnow, pp. 271-294. Danish Polar Centre, Copenhagen, 1996)...33

4. The Variety of Artistic Expression in Dorset Culture

(Originally published in *Fifty Years of Arctic Research: Anthropological Studies from Greenland to Siberia*, edited by R. Gilberg and H.C. Gulløv, pp 287-293. Ethnographical Series 18, National Museum of Denmark, Copenhagen, 1997)...77

5. Shamanism and the Iconography of Palaeo-Eskimo Art.

(Originally published in *The Archaeology of Shamanism*, edited by Neil Price, pp. 135-145. Routledge, London, 2002)...91

6. Variability and Change in Palaeo-Eskimo Architecture: A View from the Canadian High Arctic

(Originally published in *Études Inuit/Inuit Studies* 27 (1, 2): 191-212, 2003)..................................114

7. New Evidence for Prehistoric Links Between Alaska and Arctic Canada: the Satkualuk Site in the Mackenzie Delta

(Originally presented at Annual Meeting of the Alaskan Anthropological Association, Whitehorse, Yukon, 1997)..151

8. The Norse and Native North Americans

(Originally published in *Vikings: The North Atlantic Saga*, edited by William W. Fitzhugh and Elisabeth I. Ward, pp. 238-247. Smithsonian Institution Press, Washington D.C., 2000)....................169

9. Strands of Culture Contact: Dorset-Norse Interactions in the Canadian Eastern Arctic
(Originally published in *Identities and Cultural Contacts in the Arctic*, edited by Martin Appelt, Joel Berglund and Hans Christian Gulløv, pp. 159-169. The Danish National Museum & Danish Polar Center, Copenhagen, 2000) 198

10. The Graham Tradition as Represented at Three Sites on Graham Island: Blue Jackets Creek, Honna River and Tow Hill
(Originally prepared for book *Haida Gwai: Human History and Environment From the Time of Loon to the time of the Iron People,* edited by Daryl W. Fedje and R.W. Mathewes) 224

11. Revisiting an Old Concept: the North Coast Interaction Sphere
(Originally published in *Perspectives on Northern Northwest Coast Prehistory*, edited by Jerome S. Cybulski, pp. 49-59. Archaeological Survey of Canada Mercury Series Paper 160, Canadian Museum of Civilization, Hull, 2001) 256

12. Discussion and Conclusions 271
- Variability and Evolutionary Archaeology 271
- Variability, Human Agency and Historical Contingency 274
- Archaeological Interpretation and The Narrative Mode 276
- A Model for Examining Culture Change 278
- Three Questions 282
- An Application of the Model of Diversity and Contingency to the Northern Northwest Coast 297
- Summation 302
- References Cited 306

List of Tables

3-1 Relative frequency of eleven functional artifact classes in ten Eureka Upland Independence I components 41

3-2 Relative frequency of four functional artifact categories in ten Eureka Upland Independence I components 46

7-1 Radiocarbon dates from the Satkualuk site 160

8-1 Summary of archaeological evidence of contact between Norse and Native North Americans....173

10-1 Radiocarbon dates from Blue Jackets Creek 229

10-2 Distribution of artifacts in Bluejackets Creek site (FlUa-4)....232

List of Figures

1-1 Conventional and proposed models of biological diversification ... 6
2-1 Outline of Canadian Arctic prehistory ... 15
2-2 General correlations between intensity of prehistoric occupation and reconstructed climatic conditions in Arctic Canada ... 19
2-3 Map showing the location of the Eureka Upland and adjacent Pearyland region of Greenland ... 23
2-4 Radiocarbon dates for Independence sites on northern Ellesmere Island and Pearyland ... 24
2-5 Outline of the prehistory of the Eureka Upland, compared with that of Arctic Canada ... 26
3-1 Location of the study area and the Eureka Upland ... 35
3-2 Distribution of Independence sites on northern Ellesmere Island ... 37
3-3 Representative Independence I burins ... 42
3-4a Independence I dwelling feature from the Sojourn I component: midpassage structure ... 44
3-4b Independence I dwelling feature from the Sojourn II component: gravel depression ... 44
3-5 Comparison of two Eureka Upland Independence I components by frequency of faunal remains ... 47
3-6 Relative frequency of nine functional artifact categories in two Eureka Upland Independence I components ... 48
3-7 Selected artifacts from the Sojourn I and II components ... 50
3-8 Selected artifacts from the Westwind, Daylight, and Kettle Lake components ... 51
3-9 Representative late Independence I lithic artifacts ... 52
3-10 The Rivendell site with Feature C in the foreground ... 55
3-11 Selected lithic artifacts from the Rivendell site ... 57
3-12 Selected organic artifacts from the Rivendell site ... 58
3-13 Incomplete limestone lamp from the Rivendell site ... 59
3-14 Distribution of radiocarbon dates from sites north of 80° ... 60
3-15 Summary of changes in technological traits through the Independence sequence ... 62
3-16 The traditional and the proposed views of early Palaeo-Eskimo occupation in Arctic Canada and Greenland ... .69
4-1 Four forms of ivory "shaman's tube" ... 81
4-2 Antler baton carved with representations of human or human-like faces ... 82
4-3 Wooden specimens from Button Point, Bylot Island. ... 85

4-4 Ivory carvings of animals from Brooman Point, Bathurst Island 85
4-5 Human figure, wood with inset ivory teeth, northern Ellesmere Island 88
5-1 Map showing areas occupied by Early Palaeo-Eskimos and the Dorset culture 92
5-2 Antler baton with faces, *c.* A.D. 1000 97
5-3 Animal/woman figure, carved in ivory, *c.* A.D. 700 99
5-4 Ivory shaman's teeth, *c.* AD 500-1000 99
5-5 Ivory flying bear with skeletal markings, *c.* A.D. 0-500 100
5-6 Ivory seal with skeletal markings, *c.* A.D. 1000 103
5-7 Four bell-shaped tubes, carved in ivory 105
6-1 Map of High Arctic Canada, showing areas of concentrated archaeological research 115
6-2 Isolated hearth feature (Independence I), Lake Hazen, Northern Ellesmere Island 124
6-3 Plan of an Independence II dwelling at Porden Point, Devon Island 126
6-4 Lamp supports as part of a hearth feature in a Late Dorset dwelling 127
6-5 Aerial view of an Independence I dwelling with midpassage and central box hearth 129
6-6 Independence II dwelling at Porden Point, Devon Island 130
6-7 Independence II midpassage at Port Refuge, Devon Island 130
6-8 Late Dorset midpassage dwelling at the Snowdrift site, Dundas Island 132
6-9 Late Dorset semi-subterranean dwelling at Fellfoot Point, southern Devon Island 133
6-10 Aerial view of a Late Dorset semi-subterranean dwelling with midpassage 134
7-1 Location of Richards Island and the Satkualuk site (NiTs-4) 153
7-2 Contour map of the Satkualuk site 155
7-3 Artifacts from the Satkualuk site 158
8-1 Locations of Norse-related objects found in association with North American aboriginal occupations 171
8-2 Chipped stone arrow point recovered from graveyard at Sandnes, Greenland 174
8-3 Length of yarn spun from Arctic hare fur, recovered in association with Dorset occupation at Nunguvik, northern Baffin Island 178
8-4 Examples of Dorset culture carvings representing faces with European-like features 179
8-5 Fragment of bronze bowl from Thule culture Inuit site at Port Refuge, Devon Island 186
8-6 Portion of bronze balance arm from Thule culture Inuit site, western Ellesmere Island 187
8-7 Inuit wood carving apparently representing a figure in European dress 188
9-1 Locations of Norse materials associated with aboriginal sites in Arctic Canada and North Greenland 199
9-2 Yarn spun from fur of Arctic hare, from Nunguvik feature N73 203

9-3 Unusual wooden artifacts from Nunguvik feature N73 ... 204
9-4 The site of Nunguvik, looking northwards towards the coast. ... 206
9-5 Nunguvik feature N73 during excavation. ... 207
9-6 Dorset representations of European-like faces ... 209
9-7a Radiocarbon dates on High Arctic Late Dorset components ... 211
9-7b Radiocarbon dates on High Arctic Thule and Late Dorset components ... 211
9-8 Yarn and wooden artifacts from the Nanook site (KdDq-9), southern Baffin Island ... 214
10-1 The Queen Charlotte Islands, showing locations of the three Graham Tradition sites discussed ... 225
10-2 Map of the Blue Jackets Creek site ... 226
10-3 The roadcut through the midden at the Blue Jackets Creek site ... 227
10-4 Profile of midden deposits at Blue Jackets Creek ... 228
10-5 Stone artifacts from Blue Jackets Creek ... 234
10-6 Bone, tooth and antler artifacts from Blue Jackets Creek ... 235
10-7 View of the test excavation in the Honna River midden ... 240
10-8 View of the shallow midden deposit at the Tow Hill site ... 241

Chapter 1: Introduction

Archaeological research in northern Canada is largely a product of the past half-century. Until the 1950s very little excavation had been carried out, and the goals of the projects that had been undertaken were limited to the establishment of basic cultural sequences. The acceleration of research during the 1960s and 1970s was due in part to an increase in opportunities provided by accessibility to areas that had once been prohibitively remote. It was also a result of the rapid growth and maturation of the archaeological discipline in North America. Most of the research that has been undertaken in northern regions of Canada therefore reflects the theoretical interests and methodological approaches that became current in North American archaeology during the 1960s and 1970s.

Theoretical Approaches to the Archaeology of Northern Canada

If a single perspective can be said to have characterized most of the archaeological research undertaken in northern Canada over the past several decades, it is that of cultural ecology. This perspective was basic to archaeological thinking in North America during the period, including that which came to be identified as "New Archaeology". Although cultural ecology includes a variety of approaches, these share either explicitly or implicitly the premises that cultural systems serve to relate human communities to their ecological settings; that cultural change is primarily a process of adaptation to changing ecological conditions; and that since adaptation occurs principally through a community's technology and economic practices, these spheres are central to the study of past cultures (Keesing 1974). Assumptions regarding the importance of internal cultural dynamics, and of the relative unimportance of diffusion as a significant influence on cultural change, are also essential to the cultural ecological approach.

The cultural ecological emphasis on adaptation may have seemed particularly appropriate to archaeologists seeking explanations for change in the prehistoric cultural sequences of Arctic Canada. In a region where the environment is generally perceived as hostile and even marginal to the existence of human occupation, changes in that environment would appear likely to produce significant cultural responses. Climatically-driven environmental change has been frequently identified as the factor responsible for the expansion and retreat of human occupations in Arctic North America, and for changes in the economic and subsistence patterns that characterized these occupations (Fitzhugh 1972, 1976; Maxwell 1985; McCartney 1977; McGhee 1972, 1996; McGovern 1991).

On the northern Northwest Coast, the other geographical region referenced in this dissertation, the environmental factors most commonly designated as dominant in producing cultural change are varying sea levels, the stabilization of river gradients, and the establishment of a terrestrial forest environment similar to that of the present day. Fladmark's (1975) model of the relationship between these variables and cultural development has been basic to most discussions of prehistory in the region (e.g. Fladmark, Ames and Sutherland 1990).

The models of cultural adaptation that have been advanced for northern regions are based primarily on temporal links between major cultural changes and significant events identified by palaeoenvironmental studies. Given the coarse-grained nature of most palaeoenvironmental records, such correlations are generally on a large scale, and deal with taxonomic units on the order of archaeological "cultures" or "traditions". Only in very specific cases, such as the associations that can be made between palaeoclimatic data from Greenland ice-core studies and the decline of the Norse Greenlandic colonies (Buckland *et al.* 1996), can a compelling case be made for linking a discrete environmental cause to a society's response. Even in this situation, individual communities reacted in terms of local aspects of environmental change, rather than to the general pattern evidenced in the palaeoclimatic record (Schweger 2002).

In general, little progress has been made in understanding the adaptive process at the level of actual human communities. With increasing awareness of the complexity of climatic and environmental change in northern regions, and of the range of potential human response to such events, it may be profitable to look beyond the cultural ecological perspective in search of a broader approach to understanding the nature of past cultural developments.

Mathew Johnson (1999: 187) concludes his recent survey of archaeological theory with a recognition of the variety of approaches that are currently in use, and of the value of a range of approaches in producing useful and stimulating accounts of the past. Prominent among those that have been developed over the past decades are ones which look to historical models of explanation, in contrast to the scientific models which held sway in North American archaeology during much of the past half-century (Bintliff and Gaffney 1986; Hodder 1987). Most of these approaches are allied to those of documentary history, or are derived from the premises and arguments of the *Annales* school of historians (Knapp 1992). However Chippindale (1989: 68) has argued that archaeology should look to historical disciplines such as palaeontology, rather than to either documentary history or the "hard" sciences, for effective models of explanation. The arguments presented in the following treatise are derived heuristically from a particular analogy with an illuminating discussion in the field of palaeontology.

Diversity and History

Much of Americanist archaeological thinking is conditioned by an implicit assumption of increasing complexity and diversity over time. This conjecture appears to be partially a consequence of the cultural ecological perspective, as Steward's (1955:3) initial definition of cultural ecology was closely related to the assumption of cultural development "as a matter of increasing complexity". On the grand scale of North American prehistory, we may crudely depict the general archaeological perspective as visualizing a relatively uniform initial cultural horizon of Upper Palaeolithic big-game hunters, although this picture has recently been expanded to include coastal fishers and foragers (Dillehay 1997, Dixon 1999). Through adaptation to increasingly diverse Holocene environments, these populations developed a number of regional "Archaic" or "Archaic-like" cultural variants. These in turn gave rise to increasingly diverse local traditions characterized by progressively more complex technologies and symbolic patterns, which ultimately developed into the complex mosaic of cultural groups characteristic of the Historic period.

The conceptual link between greater uniformity and increasing time depth has probably been encouraged by the decreasing visibility of archaeological remains over time. As a consequence of differential deterioration, and of the inadequate sampling of assemblages that have been largely destroyed or obscured by geological processes, older archaeological materials generally appear to be simpler and more uniform than more recent assemblages; they are especially so in comparison with the material diversity known from the ethnographic record. For whatever reason, O'Brien and Holland (1996: 178) observe that the assumption of an evolutionary progression from simple to complex is implicit in the "New Archaeology" movement that conditioned much of Americanist archaeological thought during the later twentieth century.

This view of cultural evolution is clearly analogous to the assumptions that commonly characterize thinking regarding biological evolution: that development is directed by adaptational processes from simple to complex, from general to refined, and from uniform to diverse. However the central thesis of Stephen J. Gould's (1989: 302-4) stimulating essay on the vast proliferation of Cambrian life-forms is that the uniform-to-diverse phase of this pattern does not occur in reality, and in fact that the "cone of diversity" is frequently and perhaps normally reversed (Figure 1.1).

This interpretation of the fossil record has important implications for understanding the process of biological evolution. It suggests that adaptive selection has not necessarily played the primary and directing role in the development of evolutionary lines. Rather, the survival of a small portion of any period's broad range of diversity is in the hands of historical contingency. This position leads to a reconsideration of the degree to which biological change and evolution can be explained under invariant law. Gould (1989:290) concludes that "the question of questions boils down to the placement of the boundary between predictability under invariant law and the multifarious possibility of historical contingency. Traditionalists...would place the boundary so low that all major patterns of life's history fall above the line into the realm of predictability.... But I envision a boundary sitting so high that almost every interesting event of life's history falls into the realm of contingency."

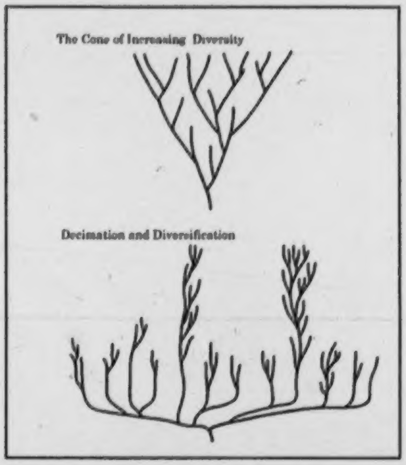
The Cone of Increasing Diversity
Decimation and Diversification

Figure 1-1: Conventional and proposed models of biological diversification: "The false but still conventional iconography of the cone of increasing diversity, and the revised model of diversification and decimation, suggested by the proper reconstruction of the Burgess Shale." (from Gould 1989 Fig.1.17)

This question parallels the arguments that have occurred during the past decades in archaeology regarding the relative importance of systematic process (generally allied to the assumptions of cultural ecology, adaptation and cultural evolution), and of historical contingency. Such contingency would include those elements introduced into human cultural development by random environmental events; events that occur in the social and political universe and which are not clearly connected to the ecological world; and those that arise from the effects of human agency in interpreting and acting upon both the tenets of normative culture and relations with the environment.

In an article presenting the original research on which this innovative view of palaeontological diversity is based, Gould *et al.* (1987:1441) propose the existence of underlying organizing principles that might account for similar patterns in archaeological and palaeontological material. While intriguing, the search for such principles is beyond the scope of the present discourse. Rather, the patterns of lineage diversity and the explanations for such patterns may best serve in a heuristic fashion, to suggest that we consider the possibility of similar situations having characterized the archaeological past.

Implications for Northern Archaeology

This concept would seem to be particularly appropriate to the archaeological study of northern cultures. On the evidence of comparative ethnography, Krupnik (1993: 225-30) suggests that northern cultures are characterized by extremely high birth-rates; the capacity to increase local populations quickly and well beyond the long-term carrying capacity of local environments; the capacity to adapt rapidly and to expand into unoccupied environments; and vulnerability to frequent extinction of local populations in the face of unexpected changes in local environmental conditions or historical situations. In specific cases where local historical sequences are well documented, he demonstrates extremely low levels of local genetic and cultural continuity. Although Krupnik's evidence was derived from Arctic hunting and herding populations, similar traits and vulnerabilities may also characterize hunting peoples inhabiting more temperate northern zones, especially those occupying insular environments (Tuck and Pastore 1985). The potential mutability and high extinction rates typical of northern populations would appear to reflect the characteristics that Gould *et al.* (1987) see as the basis for questioning the assumption of increasing diversity through adaptive selection in sequences of biological development.

The chapters which follow consist of a series of papers which represent attempts to deal with the nature of variability in northern archaeological sequences, and the interpretation of diversity in terms of processes influenced by environmental factors, internal cultural dynamics, and historical events impinging on local populations. Some of the chapters deal directly with the concept that, at any time in the past, there existed a mosaic of societies and cultures as diverse as that of the Historic Period. Others examine the implications of this idea for the interpretation of culture change, and the inference that historical occurrences arising outside the realm of local ecological conditions may have had considerable impact. In general terms, the papers address several important questions which apply directly to our interpretation of northern cultural sequences:

(1) Have we created speciously uniform analytical units through a process of reification? For example should archaeological constructs such as “Independence Culture” or “Dorset Culture” be considered to have spatial and temporal reality, or are they more usefully thought of as analytical categories defined on the basis of attributes assigned from numerous geographically and temporally discrete cultural units?

(2) Have we created illusory lines of ancestry-descent, based on the assumption that biological and cultural continuity was the normal situation among prehistoric northern peoples? Conversely, have we employed questionable assumptions regarding the interpretation of the past through the incorrect use of direct historical approaches and analogical reasoning? If historical discontinuities occur at a significantly higher rate than we have usually assumed, greater care must be

taken in selecting truly analogous comparisons rather than those based on assumed direct historical continuities.

(3) Have we allowed assumptions regarding cultural uniformity, and the unimportance of historical contingency as a process influencing cultural change, to obscure the evidence for cultural contacts that were of consequence in the history of northern peoples?

Chapters 2 to 9 examine aspects of variability in relation to the Palaeo-Eskimo cultural tradition in Arctic Canada. Similar investigations with regard to early prehistoric cultural traditions on the northern Northwest Coast are the focus of Chapters 10 and 11. Chapter 12 elucidates the perspective which has been developed in these papers, in which variation is considered an important element in the understanding of cultural continuity and change. The three questions listed above are discussed with regard to the materials presented in the papers dealing with early Arctic cultures. Finally, the approach proposed in this treatise is considered in the context of the northern Northwest Coast, a distinct cultural and environmental region.

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Chapter 2: Environmental Change and Prehistory in Arctic Canada

Introduction

Current interests in environmental change are concerned with how such changes will influence human populations and ways of life. These interests are especially pertinent in arctic regions, where most general circulation models produce scenarios of relatively significant warming (see Etkins and Agnew, this book). Human adaptations to arctic regions are assumed to be particularly vulnerable to environmental changes, since Arctic environments are at the margins of human adaptive tolerance. One approach to predicting the impacts of future changes on northern populations involves reconstruction of the ways in which arctic populations have responded to environmental changes (Jacobs 1986). This paper will critique such attempts at explaining prehistoric cultural change in terms of environmental change, and will suggest that most of these studies have been based on oversimplified interpretations of cultural dynamics. An alternative approach to the study of past environmental change in Arctic Canada will be presented.

Environmental Change as an Explanation of Cultural Change

Over the last twenty years, many archaeologists have used environmental change as an important factor in explaining shifts in the adaptations of prehistoric hunting peoples to Arctic regions (Barry *et al.* 1977; Dekin 1972; Fitzhugh 1972; Jacobs 1986; McGhee 1972; Maxwell 1985). Most such attempts have been limited to correlating the major changes in prehistoric cultural patterns with broad changes indicated by palaeoenvironmental studies, and inferring causative links between events on the environmental and cultural levels. The general nature of these studies can be described in terms of a summary of the prehistoric sequence of occupations of Arctic Canada.

The prehistory of Arctic Canada is currently thought of in terms of two subsequent populations: Palaeo-Eskimos and Neo-Eskimos (Figure 2-1). The Palaeo-Eskimos seem to have been of Siberian origin, rapidly expanding across the North American Arctic at some time shortly before 4000 years ago. They probably introduced the bow-and-arrow to the New World, and they seem to have concentrated their subsistence efforts on hunting land mammals, as well as taking fish and birds. Sea mammal hunting appears to have been of importance in only a few areas, and was largely limited to the hunting of seals. The Palaeo-Eskimo expansion occurred during the closing phases of the postglacial thermal maximum; it is generally thought to have been encouraged by the increased terrestrial productivity resulting from climatic conditions which were somewhat warmer than at present.

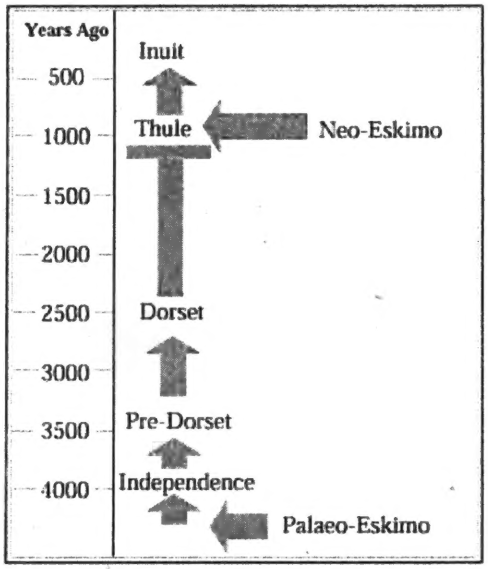


Figure 2-1: Outline of Canadian Arctic prehistory.

After approximately 3500 years ago there was a decrease in the size and number of Palaeo-Ekimo occupations of most regions. Some areas, including most of the High Arctic islands to the north of 75° latitude, appear to have been abandoned. At the same time, Palaeo-Eskimo occupations appear to have spread across the Barren Grounds region between Hudson Bay and the Mackenzie drainage, and to have expanded southward as far as the northern portions of the Prairie provinces. These changes in territorial distribution have been attributed to a climatic cooling generally evidenced across the Arctic after about 3500 years ago. Decreases in terrestrial productivity may have terminated Palaeo-Eskimo occupations of some northern areas, and may have encouraged a southward movement of these Arctic-adapted peoples into areas which had previously been occupied by Subarctic-adapted Indian groups.

The next major cultural development occurred in the centuries around 2500 years ago, and led to the development of the Dorset culture. This widespread change involved a general increase in the importance of sea mammal hunting throughout the central and eastern Arctic, which in turn appears to have resulted in larger and more stable local populations. In some regions, Dorset people began to build winter villages with semi-subterranean houses. This suggests a more efficient economy and less transient hunting patterns than those followed by their Palaeo-Eskimo ancestors. The development of Dorset culture seems to have occurred during a period of continued climatic cooling evidenced in most Arctic areas. It can be argued that the shift in emphasis from terrestrial to marine resources at this time was related to declining terrestrial productivity, and to the contemporaneous increase in the seasonal duration and extent of stable sea-ice conditions. To the Palaeo-Eskimos, who lacked the sophisticated maritime hunting equipment of later Inuit peoples, increased sea ice may have provided a stable hunting platform which allowed development of an efficient ice-hunting economy.

The Dorset people continued to inhabit Arctic Canada until approximately 1000 years ago, when their occupation of most regions was brought to an end by an invasion of Neo-Eskimos from Alaska. This population is referred to archaeologically as the people of the Thule culture, and was ancestral to the modern day Inuit. The Thule Inuit had developed a sophisticated maritime hunting technology, based on float-harpoons used from skin-covered boats, and were efficient hunters of animals as large as bowhead whales. The Thule people spread rapidly eastward across Arctic Canada and Greenland, introducing an Alaskan adaptation and way of life including the construction of permanent winter villages. Several scholars have seen a causal relationship between the relatively ice-free seas of the Mediaeval Warm Period from approximately A.D.1000 to 1400, and the expansion of maritime-oriented Alaskan Inuit across Arctic North America.

The classic maritime-oriented Thule culture and economy survived for only a few centuries in most regions of Arctic Canada. By about 400 years ago, all Inuit groups had withdrawn from the High Arctic islands north of 75° latitude. Elsewhere, local Inuit populations had abandoned many of the more distinctive aspects of Thule economic and cultural patterns, and had adapted their ways of life to their local environments. The decline of Thule culture has often been ascribed to the cooling conditions of the Little Ice Age from approximately A.D. 1600 to 1850. Increases in sea ice extent and duration, and a consequent decrease in the populations and range of bowhead whales and other large sea mammals, is thought to have decreased the viability of the traditional maritime-based

Thule economy. The development of the regional adaptations characteristic of the Historic Inuit has therefore been seen as largely a product of environmental changes which occurred over the past few centuries.

Critique of Environmental Explanations

The summary of Arctic prehistory presented in the previous section notes the major changes in cultures and economic patterns which have frequently been interpreted as responses or adaptations to environmental change. All of the instances cited above involve major and widespread human responses: expansion into a large geographical region; abandonment of a large region through either retreat or extinction; or development of the technology, skills and environmental knowledge involved in undertaking a significant shift in subsistence economy. These archaeologically-detected changes in human activities have been correlated temporally with marked and widespread changes detected by palaeoenvironmental studies (Figure 2-2). The temporal correlation is then interpreted as evidence of a human response to environmental change.

Such interpretations may be criticized on three grounds: first, that human actions respond to short-term environmental events which cannot be detected by palaeoenvironmental techniques; second, that dating techniques lack the precision necessary to define correlations between such short-term events and associated human responses; and third, that human responses to environmental change can be so variable and complex that no cultural or economic change can be certainly attributed to a simple and direct response mechanism.

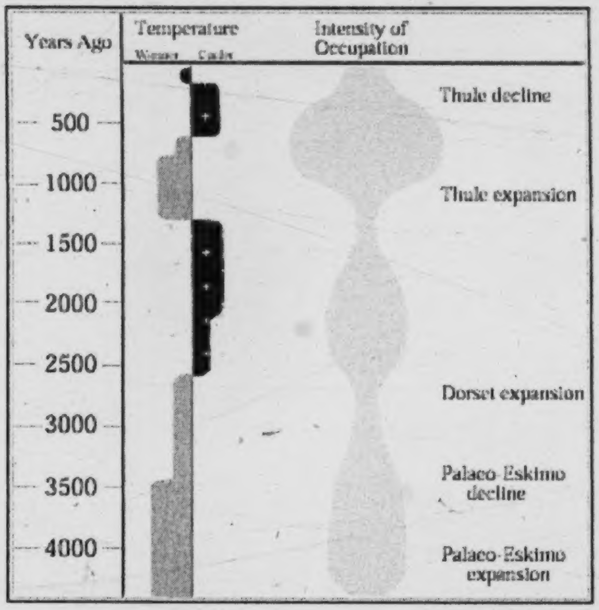


Figure 2-2: General correlations between intensity of prehistoric occupation and reconstructed climatic conditions in Arctic Canada.

These criticisms obviously apply to the types of correlations noted above as the basis for interpretations of Arctic prehistory. Prehistoric Arctic populations, with subsistence economies based on hunting and very limited means to accumulate surplus food, were extremely vulnerable to unexpected environmental variations which occurred on a time scale of weeks or months. Their existence was based on the ability to predict the arrival of caribou migrations, fish runs or herds of sea mammals, as well as to predict the occurrence of sea-ice, open water or snow conditions which could contribute to or hinder travel and hunting success. An unexpected seasonal change in one or more of these factors could require a significant adaptational response, or could lead to disaster for a local population.

Palaeoenvironmental techniques currently available do not directly measure past changes in the factors which were most important to human adaptation in Arctic regions:

sea-ice conditions, snow cover, and the seasonal availability of animal populations. When changes in these factors can be inferred from proxy data, such as that derived from glaciological, palynological or limnological studies, the evidence cannot resolve the short-term past events (on a scale of weeks or months) to which prehistoric populations were vulnerable. The past environmental changes which such studies can detect represent the accumulation of many such short-term events over periods of decades or centuries, and are therefore not directly applicable to human adaptational response.

The assessment of contemporaneity between past environmental changes and past cultural events is especially difficult in Arctic regions. Radiocarbon dating of Arctic archaeological sites involves problems of preservation and contamination of the samples, and the nature of the carbon reservoirs in which various materials originate (McGhee and Tuck 1976). As a result, the cultural changes which are interpreted as adaptational responses are dated very broadly and rather insecurely (Morrison 1989). Judgements of temporal correlation between such changes, and long-term palaeoenvironmental changes, cannot be made with precision or certainty.

A third critique of such interpretations relates to the fact that they are generally based on large-scale cultural constructs such as "Dorset culture" or "Thule culture". Such interpretations appear to assume that past Arctic populations existed on the basis of widespread and uniform adaptations which can be relatively simply defined. However such definitions (Palaeo-Eskimo caribou hunters, Dorset ice-hunters, Thule whalers) cannot be more than stereotypes which simplify what was actually a complex mosaic of cultural adaptations to local regions and local environmental conditions. Such a mosaic of adaptations is apparent among the Historic Inuit of the past few centuries: for example, the Labrador Inuit hunted bowhead whales from umiaks, and spent much of the winter in large permanent houses built of boulders and turf (Taylor 1974); the Netsilik Inuit of the central Arctic had abandoned the umiaks and permanent winter houses of their Thule ancestors, and lived almost exclusively on small ringed seals, fish and caribou (Rasmussen 1931); the Polar Inuit had a unique adaptation based on the North Water polynya (an ice-free marine environment maintained by tides, currents or other phenomena) and the bird nesting cliffs of northwestern Greenland. (Holtved 1967). Variability in local adaptations also characterizes the Thule period of Inuit occupation (Savelle and McCartney 1988), and appears to have been a significant characteristic of local Dorset and early Palaeo-Eskimo peoples (Maxwell 1985, Sutherland 1984, 1990). Simple statements of widespread cultural response to environmental change ignores the variability in adaptational patterns, and the consequent variability and complexity of response, which existed at all periods of arctic prehistory.

Finally, prehistoric Arctic peoples did not develop or change their ways of life purely in terms of adaptive responses to environmental changes. Like all other human groups, social and political concerns were often as important in shaping their lives as were basic economic concerns. As an example of how this realization can influence interpretations of past events, we might note that McGhee (1970) among others originally postulated that the Thule Inuit expansion eastward from Alaska could be seen as a direct response to the relatively open water conditions of the Mediaeval Warm Period. In a later attempt to explain the same phenomenon (McGhee 1984), the same author suggests that the Thule movement eastward from Alaska may have been stimulated by a desire to obtain valuable metal for tools from the native copper deposits of Coronation Gulf in the central Arctic, iron from the meteoric deposits of northwestern Greenland, and by trade from the newly established Norse colonies of southwestern Greenland.

An Alternative Approach: Local Adaptational Change

Despite the criticisms of earlier interpretations noted above, it seems likely that environmental changes have been a major influence on the development of prehistoric human cultural and economic patterns in Arctic Canada. In order to effectively study such influences, we might adopt an alternative approach, in which the emphasis is on defining adaptations by small local populations. Broader interpretations of environmental and cultural change might be seen as a long-term goal, based on the accumulated evidence obtained from local studies. An example of such an approach is presented below.

It has been suggested that the links between environmental and cultural change can be most easily detected in areas which are marginal to human adaptation (Ingram *et al.* 1981; McGhee 1981). The Eureka Upland, comprising approximately 30,000 km^2 of intermontane valleys and plateaus on Ellesmere and Axel Heiberg islands (Figure 2-3), provides such an example (Sutherland 1990). Unlike most Arctic regions occupied by prehistoric hunters, the seas surrounding the Eureka Upland are, and probably were, almost continuously ice-covered and provide limited marine mammal resources. If past climatic regimes were similar to those of today, prehistoric hunters would have had to depend almost entirely on terrestrial food resources, notably muskoxen.

The first people known to have occupied the area are assigned to the Independence culture, a unique early Palaeo-Eskimo variant which may have maintained some characteristics of their ancestral Siberian technology and way of life. The temporal intensity of their occupation of the Eureka Upland and adjacent Pearyland may be estimated by the distribution of a series of 45 radiocarbon dates, obtained on local willow charcoal and muskox bones directly associated with Independence dwellings throughout the area (Sutherland 1990). This distribution shows a scatter of dates before 4000 years ago, rising to a peak between approximately 4000 and 3500 years ago (associated with the Independence I variant); a low level of

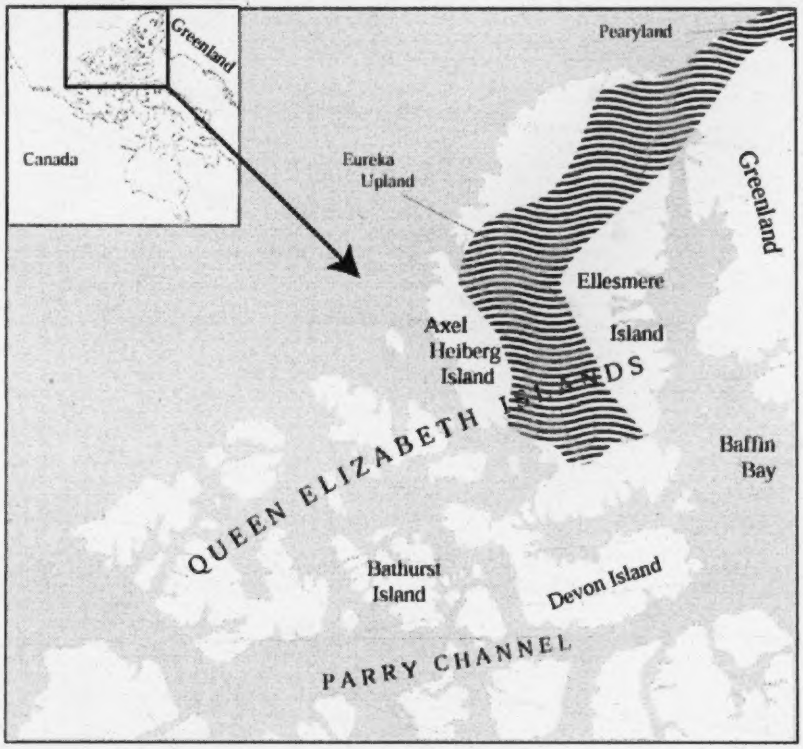

Greenland
Canada
Pearyland
Eureka Upland
Greenland
Ellesmere Island
Axel Heiberg Island
QUEEN ELIZABETH ISLANDS
Baffin Bay
Bathurst Island
Devon Island
PARRY CHANNEL

Figure 2-3: Map showing the location of the Eureka Upland and adjacent Pearyland region of Greenland.

dates over the period 3500 to 2600 years ago; and a smaller peak (associated with the Independence II variant) between 2600 and 2200 years ago (Figure 2-4). This distribution of dates is consistent with a picture of initial occupation and expansion at a time of relatively productive environmental conditions, which may have been related to the final phases of the postglacial thermal maximum. The lower frequency of radiocarbon dates between 3500 and 2600 years ago suggests that both muskox and human populations may have decreased at a time of cooling climate and decreased vegetational productivity.

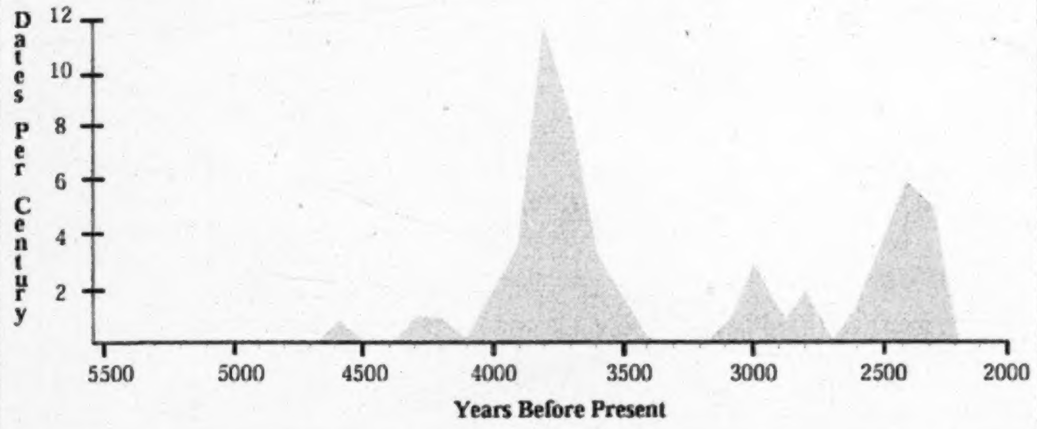


Figure 2-4: Radiocarbon dates for Independence sites on northern Ellesmere Island and Pearyland.

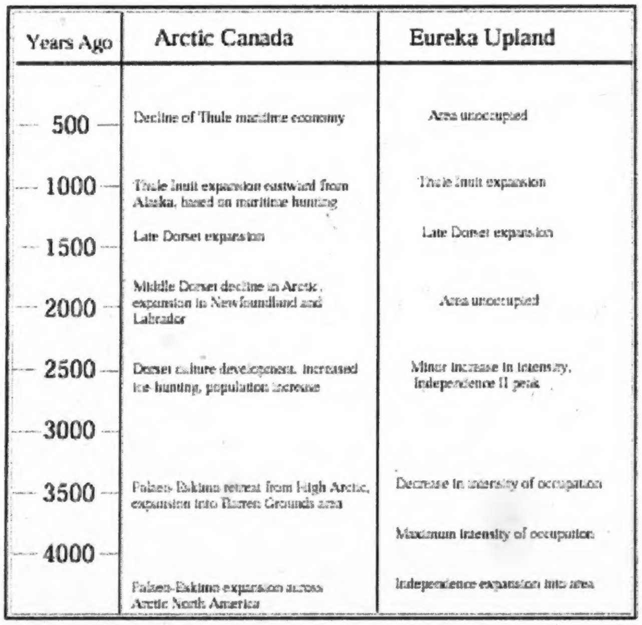
After approximately 2200 years ago, the area appears to have been abandoned for up to 1000 years, suggesting a period of severely decreased environmental productivity. Muskox populations, in particular, were probably reduced to a level which could no longer support continued human predation. Conditions may have been similar to those of the past few centuries, when Inuit hunting parties occasionally visited the area but did not attempt continuous occupation. Prehistoric occupancy of the Eureka Upland was established once again about 1200 years ago, when late Dorset immigrants arrived from more southerly regions (Sutherland 1989). Evidence suggests that in this region their economy was based on both marine and terrestrial resources.

About 1000 years ago, the Dorset occupation of the area was followed by the arrival of Thule Inuit who, as maritime hunters, must have found local sea hunting conditions more productive than today. Some Thule dwelling sites contain the remains of whale bones, suggesting that open water may have been more extensive during this period. However, the Thule people also penetrated the interior regions of Ellesmere Island, and appear to have based a critical portion of their subsistence on muskoxen. The final abandonment of the area as a continuously occupied Inuit territory occurred a few centuries ago, and may relate to a decline in muskox populations to levels resembling those of the past century (Sutherland 1989).

Archaeology as a Tool for Palaeoenvironmental Studies

The sequence of human adaptations described from the Eureka Upland appears to be consistent with the sequence of environmental changes derived from other sources: the Independence occupation begins and flourishes during the late postglacial thermal maximum, and disappears during the colder centuries around 2000 years ago; the area is reoccupied by late Dorset and early Thule people during the Mediaeval Warm Period, and is abandoned once more at the time of the Little Ice Age. As was argued in an earlier section, the assembly of information on changing adaptations to such a specific local environment is an effective first step in understanding the relationships between environmental and prehistoric cultural changes on a broader scale (Figure 2-5).

Information on prehistoric adaptations may be used as a tool to provide indirect evidence on the past environments of local areas. Adaptational evidence, such as that noted above with regard to the various muskox-hunting populations of the Eureka Upland, contributes information regarding fluctuations in local muskox populations over the past 4000 years. This, in turn, may be related to local climatic conditions, through intervening variables such as vegetational productivity, snow cover and frequency of winter ice-storms. Evidence for maritime hunting adaptations at certain periods, indicates sea ice conditions that were more favourable and sea mammal populations that were larger than those of the present day.



Years Ago	Arctic Canada	Eureka Upland
500	Decline of Thule maritime economy	Area unoccupied
1000	Thule Inuit expansion eastward from Alaska, based on maritime hunting	Thule Inuit expansion
1500	Late Dorset expansion	Late Dorset expansion
2000	Middle Dorset decline in Arctic, expansion in Newfoundland and Labrador	Area unoccupied
2500	Dorset culture development, increased ice-hunting, population increase	Minor increase in intensity, Independence II peak
3000		
3500	Palaeo-Eskimo retreat from High Arctic, expansion into Barren Grounds area	Decrease in intensity of occupation
		Maximum intensity of occupation
4000		
	Palaeo-Eskimo expansion across Arctic North America	Independence expansion into area

Figure 2-5: Outline of the prehistory of the Eureka Upland, compared with that of Arctic Canada.

Archaeology also provides more direct evidence of past environmental conditions. Archaeological sites can be viewed as reservoirs of biological specimens collected by prehistoric inhabitants. Arctic hunters sampled the animals and other resources of their territories, and collected these materials in their occupation sites. By comparing the palaeobiological material recovered from archaeological sites with the contemporary range and frequency of occurrence of species represented, evidence of past range-changes can be recovered.

As an example from the Eureka Upland, the analysis of bones found in a Thule site excavated on eastern Axel Heiberg Island revealed the presence of three species, Ross's goose (*Chen rossii*), Brown lemming (*Lemmus sibiricus*) and Harp seal (*Phoca groenlandica*) whose current range limits are to the south of the area (Balkwill 1982; Sutherland 1991). The presence of these bones suggests that between approximately 900 and 500 years ago, when this site was occupied, the area may have had a somewhat warmer climate and more extensive open water conditions than exist at present.

Summary

This paper has summarized traditional interpretations, which relate prehistoric cultural changes in Arctic Canada to changes in environmental conditions, and ultimately to climatic changes. Such interpretations have been criticized on the grounds that they are based on temporal correlations between cultural and environmental events, which are too imprecisely dated to allow certain correlation; that human responses to environmental change occur on a time scale too short to be detected by most palaeoenvironmental studies; and that they oversimplify human response to environmental change.

If prehistoric adaptations are to be used as a model for predicting human response to future environmental change, the actual processes of response must be more closely studied. It has been argued above that such studies must be carried out on a local or regional level, and that where possible, direct archaeological evidence should be used to assess the local palaeoenvironmental conditions relevant to prehistoric occupations. It is also suggested that, in a reversal of the traditional patterns whereby archaeologists use palaeoenvironmental information as an aid in cultural interpretation, archaeology in Arctic regions may make a valuable contribution to the reconstruction of ancient environments.

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Chapter 3: Continuity and Change in the Palaeo-Eskimo Prehistory of Northern Ellesmere Island

Introduction

Current knowledge of the early prehistory of Arctic Canada and Greenland has reached a stage which has allowed the definition of major cultural taxonomic units, such as Independence, Pre-Dorset, Saqqaq, and Dorset. However, the specific processes which shaped these units have not been clearly identified, nor have the relationships between the units been adequately defined (cf. Maxwell 1976, 1985).

The number of field investigations that have focused on the study of Palaeo-Eskimo problems in various Arctic regions has greatly increased in recent years. As a result of this work, we are beginning to acquire sufficient information to construct regional prehistories, and to question the efficacy of the core/fringe model of cultural development which has been prominent in North American Palaeo-Eskimo research over the last two decades. This model views most examples of cultural change as the result of population expansions from a "core area" of Palaeo-Eskimo development in northern Hudson's Bay and adjacent regions. Alternatively, several researchers (Schledermann 1980; Helmer 1980, 1984; Sutherland 1984, Bielawski 1988; Cox 1978, 1992) have argued that there is a greater degree of variability in early Palaeo-Eskimo complexes than was previously believed, and that there is evidence for local *in situ* development in areas which are not confined to the so-called "core."

The primary purpose of this paper is to report on archaeological evidence from northern Ellesmere Island, which suggests that in this particular region there was cultural continuity from the earliest period of occupation until the appearance of what Eigil Knuth has defined as Independence II. It is argued that the variability which does occur is most likely the result of gradual temporal change within a continuing local population, which maintained its existence through a high degree of mobility within a large geographical area, and through occasional contacts with other groups.

A second purpose is to suggest that some of our problems in interpreting Palaeo-Eskimo prehistory may arise from thinking of prehistoric cultural units, such as "Independence I" or "Pre-Dorset," in terms of widespread populations with relatively uniform technologies and adaptations. The early prehistory of the Arctic might be more usefully considered in terms of a "mosaic" of local populations, each adapted to local resources and local environments over varying periods of time.

Northern Ellesmere Island

The Study Area

Northern Ellesmere Island is situated between 80° and 83° latitude in the High Arctic archipelago (Figure 3-1). Together with the contiguous regions of northern Greenland, it is perhaps the most geographically isolated region of the Arctic to have been occupied prehistorically. It is certainly one of the most marginal in terms of the marine resources upon which most Arctic hunters have relied.

It is a mountainous region with elevations of over 2700 metres, and extensive ice caps and valley glaciers restrict the movements of animals and people to narrow

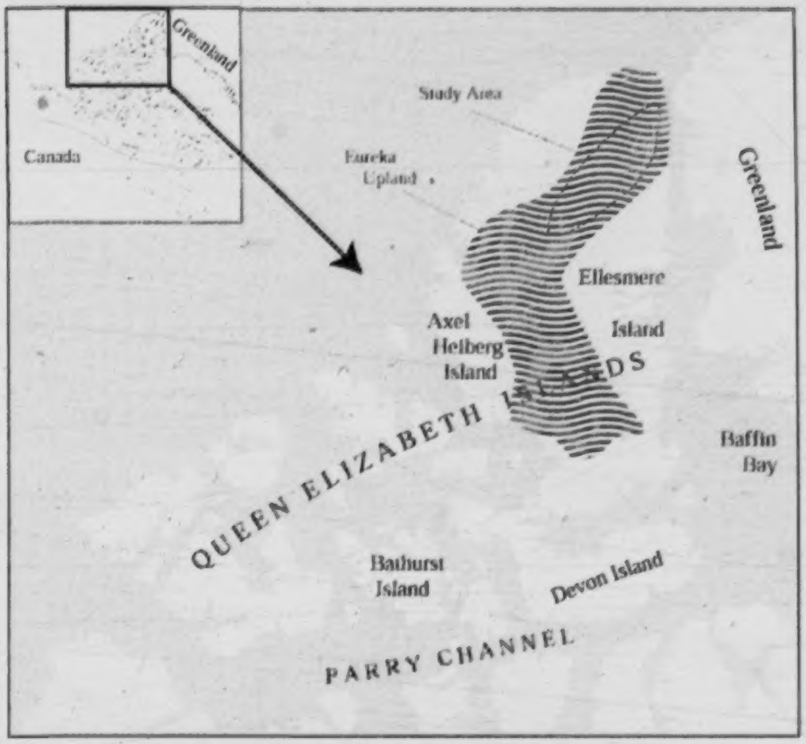

Greenland
Canada
Study Area
Eureka
Upland
Greenland
Ellesmere
Island
Axel
Heiberg
Island
QUEEN ELIZABETH ISLANDS
Baffin
Bay
Bathurst
Island
Devon Island
PARRY CHANNEL

Figure 3-1: Location of the study area and the Eureka Upland.

intermontane regions. The intermontane plateaus and valleys, which form part of the physiographic zone known as the Eureka Upland, are characterized by a cold desert landscape and vegetation.

Sea ice conditions in the study area are less than favourable for marine mammals. The permanent ice of the Polar Pack lies off the northern coast of Ellesmere Island, while the area is bordered to the east and west by fiords and channels in which multi-year ice predominates (Lindsay 1977). Sizeable areas of open water occur, if at all, as very temporary late summer phenomena. Throughout the period of human occupation, ice conditions in the area have likely remained essentially unchanged, with the possible exception of the Medieval Warm Period or Little Climatic Optimum, when more extensive open water conditions may have occurred. Through most of prehistoric time, therefore, hunters would have had to base their adaptations primarily upon terrestrial resources.

The environment of the area is very similar to that of Pearyland, the portion of Greenland stretching northwards from the Inland Ice. Pearyland is contiguous with northern Ellesmere Island, from which it is separated only by the 20 kilometre width of Robeson Channel, which is covered with stable ice for most of the year. Together, these areas have been characterized as a portion of "The Muskox Way," originally named by Steensby (1916) who saw this as a migration route for proto-Eskimo muskox hunters spreading across the Arctic.

In summary, the main features of the area under discussion are as follows: (1) it is relatively large: 30,000 square kilometres of unglaciated land, contiguous to the 100,000 square kilometre area of Pearyland, with which it forms a single environmental unit; (2) it is geographically marginal to Arctic North America, and characterized by a virtual absence of marine mammal resources; and (3) it is isolated from more southerly regions by extensive mountainous areas bearing icecaps and glaciers. The closest region which has shown evidence of extensive prehistoric occupation is the Bache Peninsula region of eastern Ellesmere Island and the adjacent Thule District of northwestern Greenland (Schledermann 1990). The Bache Peninsula is approximately 300 km distant through extremely rugged and barren country.

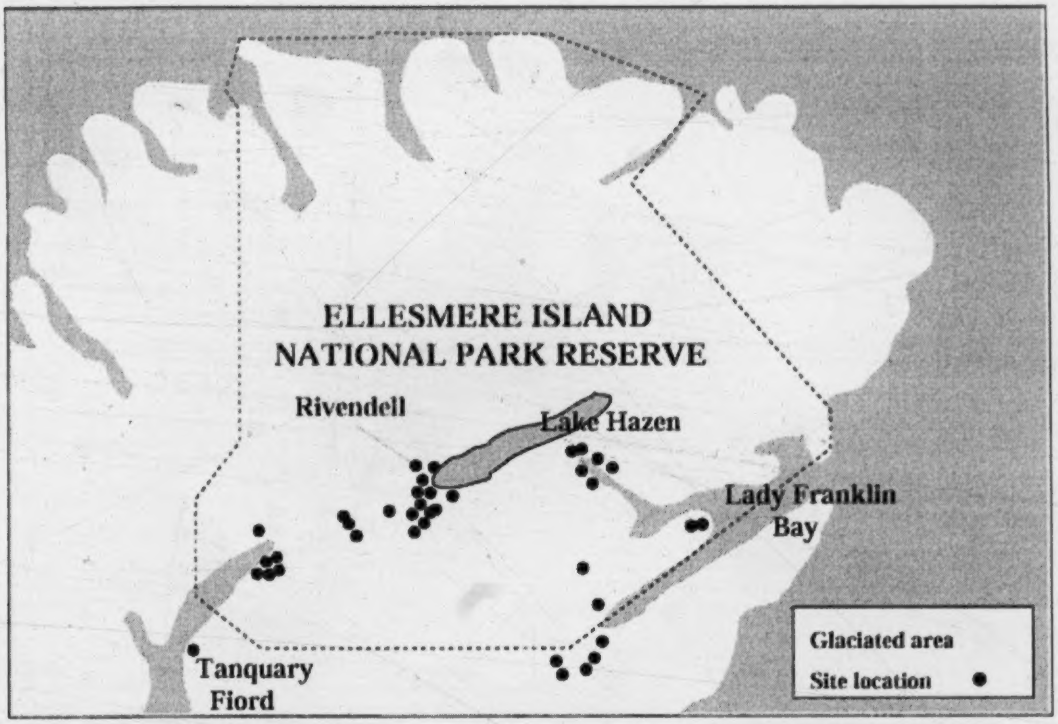

ELLESMERE ISLAND
NATIONAL PARK RESERVE
Rivendell
Lake Hazen
Lady Franklin
Bay
Tanquary
Fiord
Glaciated area
Site location ●

Figure 3-2: Distribution of Independence sites on northern Ellesmere Island.

Archaeological Evidence

The evidence presented in this paper is based on five field seasons of survey and excavation on northern Ellesmere Island and adjacent Axel Heiberg Island (Sutherland 1977,1980,1981,1983, 1989, 1991) as well as on a 1965 survey carried out by Eigil Knuth and Geoffrey Hattersley-Smith in the vicinity of Tanquary Fiord and Lady Franklin Bay on northern Ellesmere Island (Knuth 1965). Thirty-eight localities in the study area can be associated with the early Palaeo-Eskimo occupation (Figure 3-2). Eleven of these sites have been excavated, and eight components have been radiocarbon dated on samples of either land mammal bone or wood charcoal, most of which has been identified as originating from Arctic willow.

Several factors combine to suggest that the relatively small number of archaeological sites reported should not be understood as a measure of the total occupation of the area. It should be noted that the results reported in this paper are based on only twelve weeks of field survey and excavation devoted to the Palaeo-Eskimo occupation of the region, and most of this work was undertaken in the Tanquary Fiord - Lake Hazen - Lady Franklin Bay corridor, within the boundaries of the Northern Ellesmere Island National Park Reserve. Preliminary surveys of other adjacent regions, such as the Eureka Sound area of western Ellesmere Island, indicate the presence of early Palaeo-Eskimo sites in these areas as well (Sutherland 1983, 1992). Another important factor in considering the size of the site sample is the rapid loess accumulation which occurs in the Eureka Upland, and which obscures site visibility. Palaeo-Eskimo sites are often so inconspicuous that archaeological survey by either foot or helicopter is not highly efficient in locating sites, as shown by the number of additional localities discovered during re-survey operations. It is also important to note that most prehistoric sites throughout the Eureka Upland are found on unconsolidated proglacial sediments, situated in mountain valleys where erosional processes are very active. Erosion must therefore be considered as a significant factor in removing sites from the archaeological record.

The majority of the investigated sites produced both artifacts and radiocarbon dates which appeared to relate to Independence I as described by Knuth (1967). However, examination and comparison of artifact assemblages from individual sites suggested the existence of a greater variability in Independence I technology than had previously been assumed. The first problem which was approached in attempting to understand the early history of northern Ellesmere Island, was that of explaining the causes underlying the perceived variability in Independence I sites and assemblages.

Variability in Independence I Assemblages

The papers published by Knuth (1952; 1954; 1958; 1966; 1967; 1968; 1978; 1981; 1983) on several decades of research in northern Greenland suggest that Independence I, at least in terms of its technology, was a very uniform cultural entity. He describes the Independence I people as specialists in muskox hunting who lived on the coast as well as in the interior, in tent dwellings with central hearths and midpassages, and who carried a tool kit characterized by notched lance blades, knife blades, and scrapers; small arrow points; retouched burin spalls; and bone needles with small round eyes. According to Knuth (1978:24-25), the peak period of Independence I occupation in the Independence Fiord area was from approximately 2500 to 2000 B.C. in calendar years (approximately 3700-4000 radiocarbon years).

Similarly McGhee (1979), in his report on the Palaeo-Eskimo occupations of Port Refuge, considered Independence I to be a cultural unit which can be differentiated from other early Arctic Small Tool tradition (ASTt) assemblages found in the same area, and which he assigned to Pre-Dorset. According to McGhee, the distinguishing technological characteristics of Independence I, at least at Port Refuge, are: small bipoints; thin triangular endblades with straight bases; large burins; and fine flaking and deep edge serration that occurs on many lithic specimens. Independence I at Port Refuge is also characterized by midpassage dwellings and a linear rather than clustered settlement pattern. Although the structures and artifacts resemble those from Pearyland, subsistence at Port Refuge was based mainly on the hunting of ringed seals rather than muskoxen.

More recently, Schledermann (1990) and Helmer (1991) have described several early Palaeo-Eskimo assemblages from eastern Ellesmere and northern Devon islands. Some of these assemblages have been ascribed to the Independence I complex. Others, which show greater or lesser amounts of differentiation from that complex as it has been narrowly defined, are ascribed to Saqqaq or Pre-Dorset cultural complexes. These complexes are thought to have geographical bases outside the Canadian High Arctic: Saqqaq in southwestern Greenland, and Pre-Dorset in the Canadian eastern and central Arctic. Cultural change within the early Palaeo-Eskimo tradition is seen in terms of the geographical expansion and contraction of these major cultural complexes, a process which is thought to have often involved the movement of actual populations.

The artifact assemblages from early Palaeo-Eskimo sites on northern Ellesmere Island are generally similar to those which have been ascribed to Independence I in Pearyland to the east, and on Devon Island to the south. Yet this overall characterization obscures a significant degree of variability between assemblages. In spite of differences in artifact styles and raw material used, all of the sites appear to represent people who were following a very specific adaptation to the interior resources of the extreme High Arctic. The distinctiveness of this muskox-hunting adaptation appears to be an argument against the interpretation of assemblage variability in terms of several distinct population movements into the area. Rather, it suggests an interpretation in terms of diffusion of technological ideas through geographically stable local populations. Before approaching this question, however, an attempt should be made to assess the degree and nature of the observed variability and to determine whether it might be due to factors such as seasonality, functional differences between sites, or cultural differences between small local groups.

The amount of variability between components can be shown by examining (1) differences in the representation of various functional classes of artifacts; (2) differences in artifact styles; and (3) differences in the types of raw material used. The degree to which the artifact assemblages vary with regard to representation by functional class is illustrated in Table 3-1, which lists frequencies of 11 functional artifact classes for 10 excavated components. While the majority of sites contain burin spalls, microblades,

CLASS COMPONENT	Burin %	Burin spall %	Micro-blade %	Flake Knife %	End-scraper %	Adze blade %	Large biface %	Weapon point %	Ovate knife %	Needle %	Other bone %	TOTAL N
Sojourn I	0	35	16	0	0	3	16	19	0	12	0	43
Sojourn II	5	36	29	0	2	2	3	5	2	15	2	59
Air Force Valley	0	22	44	0	5	0	0	5	5	20	0	18
Burin Delta	4	0	58	4	0	0	4	8	0	21	0	24
Daylight	22	4	37	0	0	0	0	15	0	7	15	27
Westwind	6	17	31	0	0	0	14	3	0	6	22	36
Kettle Lake SW	7	21	7	0	7	0	0	21	0	28	7	14
Kettle Lake S	0	33	33	0	7	0	0	0	0	13	13	15
Kettle Lake W	3	19	0	0	3	0	0	29	0	42	3	31
Kettle Lake N	0	9	0	0	0	0	0	4	0	59	27	22

Table 3-1: Relative frequency of eleven functional artifact classes in ten Eureka Upland Independence I components.

weapon points and needles, other artifact classes (adze blades, large crude bifaces, ovate and flake knives) occur in only a few assemblages. At a few sites (Sojourn I and II, Kettle Lake West), there is some evidence for a ground stone technology, in the form of edge-ground adze blades and bifaces with surface-grinding. Despite the small sample size which characterizes most Independence I assemblages, the uneven distribution of some artifact classes and the absence of a stone-grinding technology from most assemblages is likely not attributable solely to sampling error.

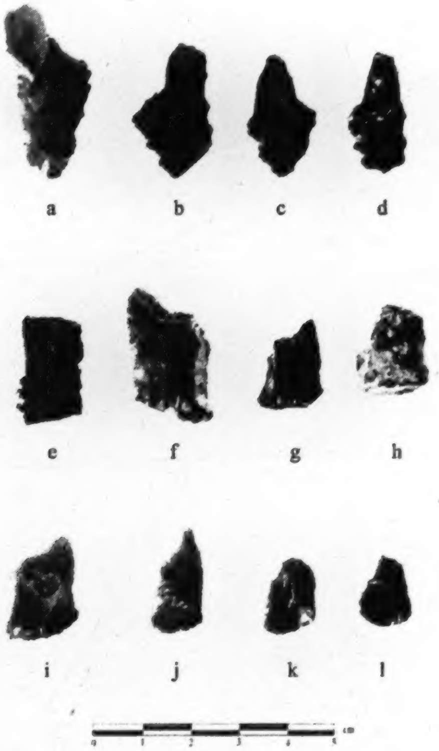


Figure 3-3: Representative Independence I burins: *a-d*) notch hafted burins; *e-h*) square hafted burins; *i-l*) round hafted burins.

Stylistic variation is also apparent in the artifacts recovered from different components. This is particularly apparent in the haft forms of stone tools as illustrated in

Figure 3-3; for example some assemblages contain burins with notched hafts, while in others the hafts of burins are squared or rounded.

The lithic artifacts recovered from local Independence I sites are made from a wide variety of materials, including basalt and 11 varieties of chert distinguishable mainly on the basis of colour. In most assemblages, however, there appears to have been a preference for one of two varieties of chert: dark grey to dark green chert on the one hand, or light grey on the other. The wide geographic occurrence of artifacts made from these two types of material suggests that the use of either was a matter of choice rather than availability, and is therefore a measure of cultural diversity within the Independence I complex.

Variability is also present in the size and types of sites, and in the form of dwelling features. Sites range from small isolated hearths to single midpassage dwellings to settlements with four or more dwellings of various types with associated caches. The linear form of settlement layout noted for Port Refuge also occurs on Ellesmere Island, but where there are no long gravel terraces the dwellings are clustered. In a total of 61 dwelling features identified at 11 Independence I sites, only 29 were of the central hearth/midpassage type (Figure 3-4a). While this total might not be an accurate reflection of the actual number of midpassage features at these sites, due to post-occupational disturbance, other types of shelters were definitely used and are often found in association with midpassage features. These include tent rings, with or without central hearths, and shallow gravel depressions that contain traces of ash but no structural hearths (Figure 3-4b). The extent to which the amount of variability in features found on a single site may be a product of multiple use of sites by different groups is not clear; the limited excavation which has been undertaken to date has neither detected nor precluded the re-use of occupation sites at different times during their history.

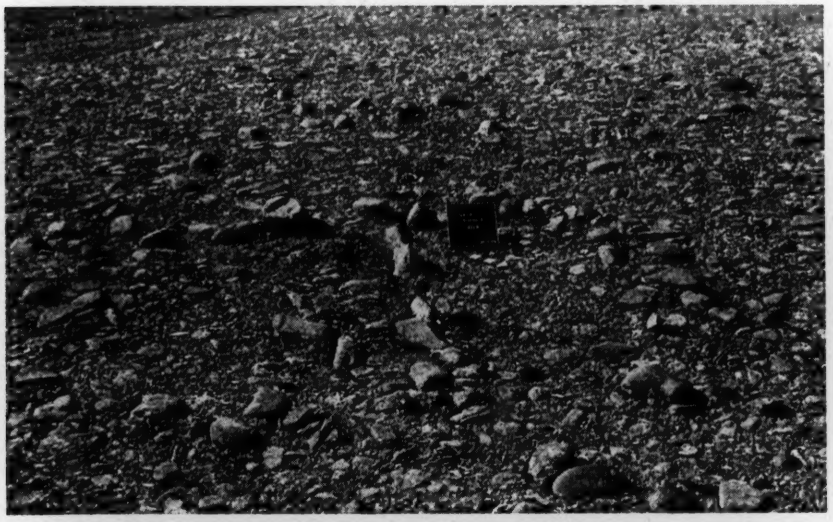


Figure 3-4a: Independence I dwelling feature from the Sojourn I component: midpassage structure.

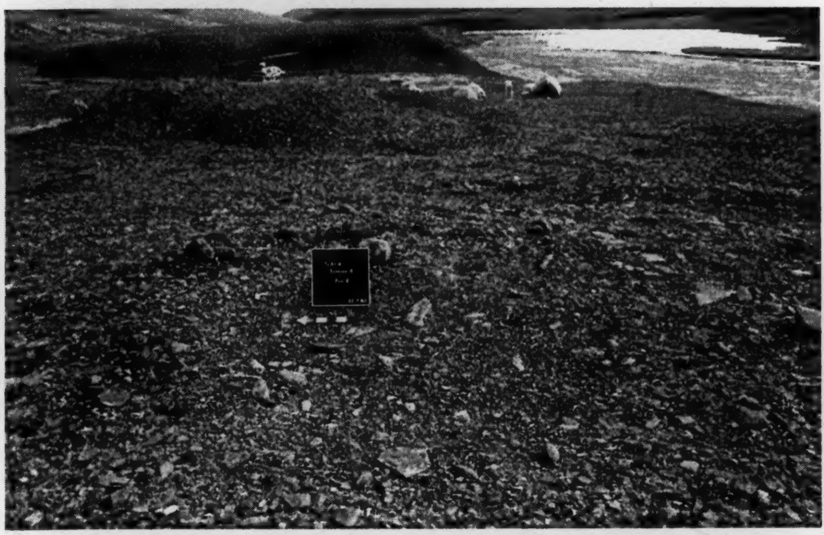


Figure 3-4b: Independence I dwelling feature from the Sojourn II component: gravel depression.

Explanations of the Diversity

The diversity which exists in the early Arctic Small Tool tradition (ASTt) sites and assemblages of northern Ellesmere Island may be discussed in terms of four general factors: (1) functional or seasonal differences between components; (2) individual stylistic variability in artifacts and dwellings made by people living in the same community; (3) stylistic variability between contemporaneous communities occupying the area; and (4) stylistic change over time. Each of these factors will be briefly examined.

Functional/Seasonal Differences

The evidence for functional differences between components is equivocal. In a sample of 10 excavated sites, hunting (as reflected by the presence of weapon points, side blades, and lance heads), butchering (as reflected by microblades, knives, large bifaces, and endscrapers) , manufacturing (as reflected by burins, burin spalls, adzes, and flakeknives), and other activities (as reflected by needles and other bone tools) are represented at most, although in varying proportions (Table 3-2). However, this sample may be somewhat biased by the fact that most of the sites excavated to date contain more than one structural feature and appear to represent base camps rather than more circumscribed uses such as butchering stations or overnight hunting camps.

CATEGORY COMPONENT	Hunting %	Manufacturing %	Butchering %	Other %	Total N
Sojourn I	19	37	44	0	43
Sojourn II	5	42	51	2	59
Air Force Valley	6	22	72	0	18
Burin Delta	8	8	84	0	24
Daylight	15	26	44	15	27
Westwind	3	22	50	25	36
Kettle Lake SW	21	29	43	7	14
Kettle Lake S	0	34	52	14	15
Kettle Lake W	29	23	45	3	31
Kettle Lake N	5	9	59	27	22

Table 3-2: Relative frequency of four functional artifact categories in ten Eureka Upland Independence I components.

There is clearer evidence of components having been occupied during different seasons. An analysis of faunal remains from two components, Westwind and Daylight, revealed a statistically significant difference in the two assemblages (Figure 3-5). The Daylight site appears to represent a light period occupation, with the remains of migratory bird and young muskoxen suggesting a spring or early summer occupation, assuming that these fauna were consumed fresh and not stored. The Westwind site, on the other hand, appears from the faunal evidence, as well as from the settlement data, to represent a dark period or winter occupation.

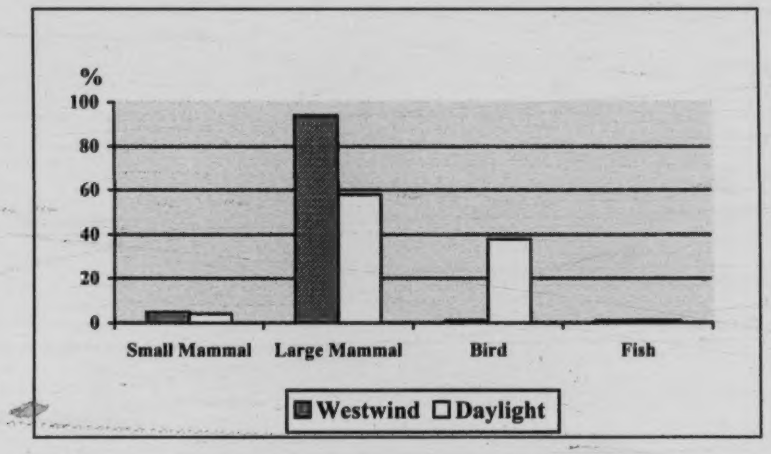


Figure 3-5: Comparison of two Eureka Upland Independence I components by frequency of faunal remains.

During both major seasons, Independence I people on northern Ellesmere Island appear to have selected similar site locations, and relied on muskoxen. As a result, there are no significant differences in either settlement or subsistence patterns, and the same artifact classes are represented in both dark and light period sites (Figure 3-6). Seasonal or functional differences in assemblages may only be apparent in the relative proportions of the various artifact classes represented, and may not contribute significantly to the diversity of assemblages noted above.

Individual Stylistic Variability

The individual stylistic variability noted by McGhee (1980) in the Port Refuge assemblages, mainly in terms of burins, was not apparent on northern Ellesmere Island, perhaps because inventories of particular artifact classes from single assemblages were too small to make such variability apparent. The fact that artifact styles and lithic materials appear to be more uniform within site assemblages than between site assemblages, suggests that this factor was relatively unimportant in causing the amount of diversity noted.

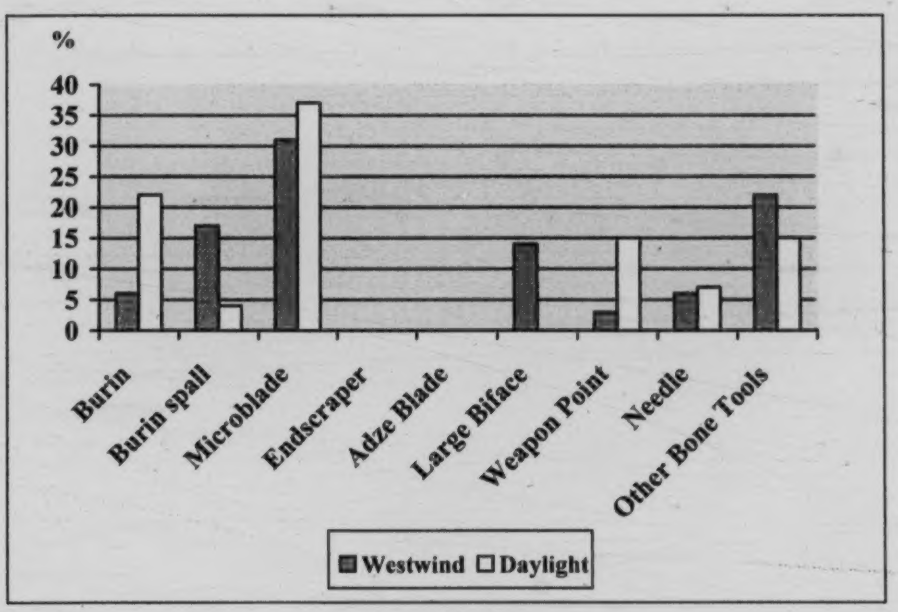


Figure 3-6: Relative frequency of nine functional artifact categories in two Eureka Upland Independence I components.

Stylistic Variability Between Groups

In such a relatively large area and with many undated sites, it is difficult to distinguish stylistic variability between groups which may have occupied northern Ellesmere Island contemporaneously from temporal variability. We may probably assume, however, that the major resource base (muskoxen) could not have supported large local concentrations of population at one or more localities within the area. More likely, small groups survived by frequent long distance movement throughout the region. It therefore seems improbable that the area could ever have supported contemporaneous groups which were sufficiently isolated from one another to have carried significantly different stylistic traditions.

Stylistic Variability Over Time

The radiocarbon dates presently available suggest that the early Palaeo-Eskimo occupation of northern Ellesmere Island occurred over a period of several centuries . It is also apparent that sites which have produced similar radiocarbon dates are characterized by similar artifact assemblages. The Sojourn I and II components have produced very early dates which are provisionally acceptable at the lower end of their range; the associated assemblages are distinctive, comprising a mixture of large crude bifaces, edge-ground adze blades, finely worked edge-serrated weapon points, notch-hafted burins, burin spalls, microblades, and small flared endscrapers (Figure 3-7). The Westwind and Daylight sites and the Kettle Lake localities, dated to the period around 3800 B.P., have assemblages which resemble those from Sojourn I and II, except that they lack adze blades (Eigure 3-8). In contrast, a group of assemblages from unexcavated and undated components are characterized by unnotched burins, large ovate knives, straight stemmed points, large flared endscrapers and a distinctive biface with a wide notch at its base, all of which find equivalents in Pre-Dorset and later ASTt assemblages in the Canadian Arctic and Greenland (Figure 3-9). Many of the stone tools from these undated sites are chipped from a light grey chert which also predominates in local assemblages assigned to Independence II/early Dorset complexes. The resemblances in artifact styles and materials to those characteristic of later complexes, suggests that these components are more recent than Westwind, Daylight, Kettle Lake or the Sojourn sites.

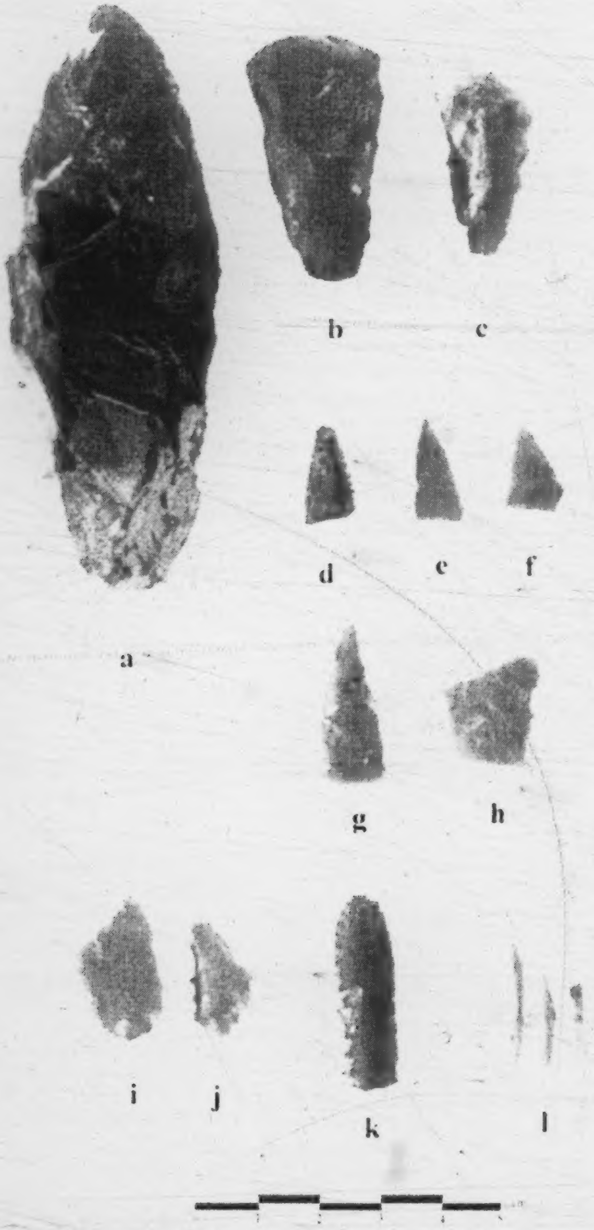


Figure 3-7: Selected artifacts from the Sojourn I and II components: *a*) large biface; *b*) edge-ground adze blade; *c*) endscraper; *d,e,g,h*) biface fragments; *f*) surface-ground biface fragment; *i,j*) burins; *k*) microblade fragment; *l*) burin spalls.

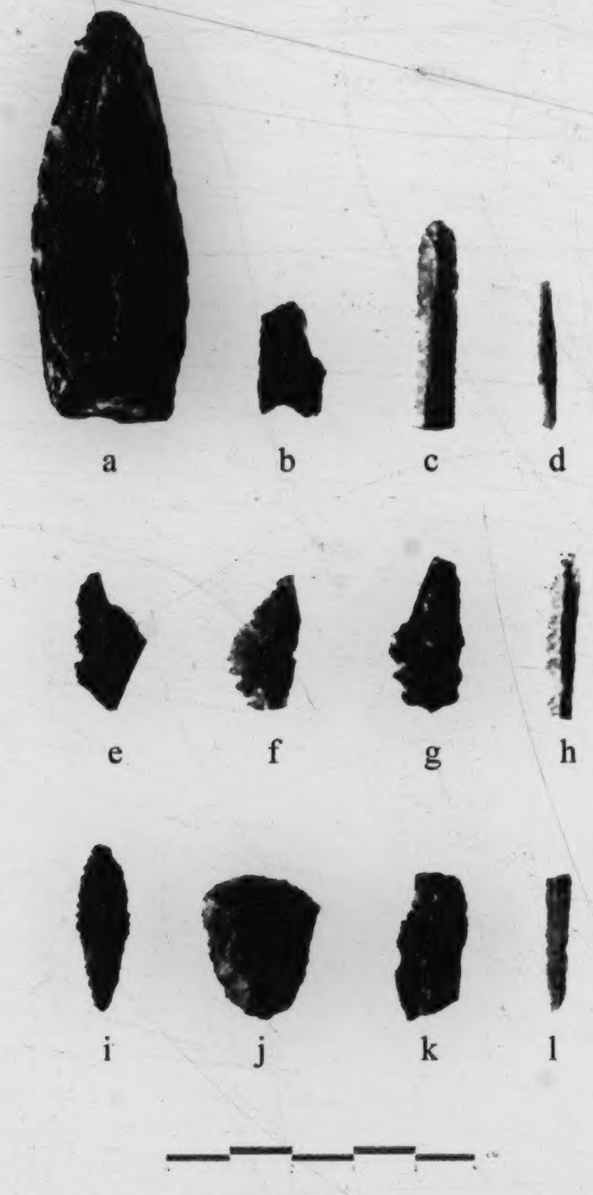


Figure 3-8: Selected artifacts from the Westwind (*a-d*), Daylight (*e-h*), and Kettle Lake (*i-l*) components: *a*) large biface; *b, e-g, k*) burins; *c,h*) microblades; *d,l*) burin spalls; *i*) bipoint; *j*) endscraper.

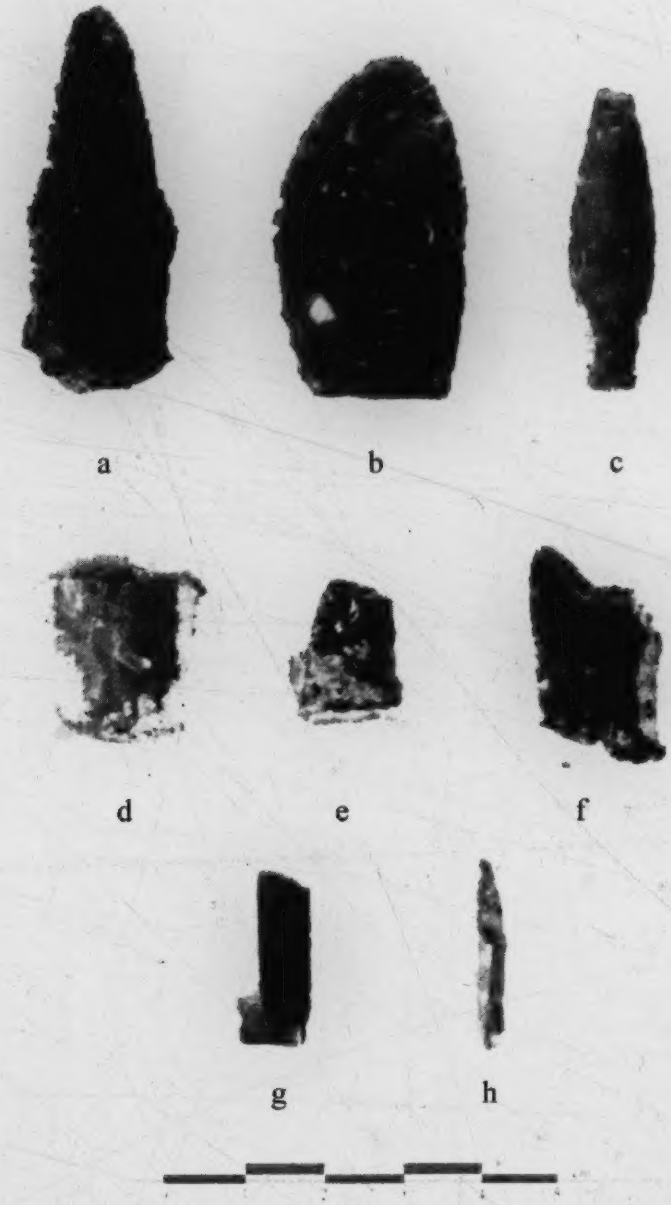


Figure 3-9: Representative late Independence I lithic artifacts: *a*) notched biface; *b*) ovate knife; *c*) straight stemmed biface; *d*) endscraper; *e-f*) burins; *g*) microblade fragment; *h*) burin spall.

Although the artifact sample from all of the sites investigated is too small to examine statistically, stylistic change over time appears to be the most likely explanation for the diversity observed in the early ASTt material from this area. It is significant that the artifact assemblages cannot be clearly separated into two or more distinct groups. Rather, the pattern which emerges seems to be one of cumulative small differences: each assemblage resembles certain others, but differs from them in distinctive characteristics. This pattern suggests a process of gradual stylistic change through a long-lasting local tradition, rather than one of cultural replacement by immigration.

It is perhaps worth noting a more general, and more subjectively measured, characteristic of the Independence I assemblages from the study area: an apparent increase in uniformity over time. This is most easily observed in the forms of chert used: light grey chert begins to be prominent over other varieties in late Independence I assemblages; and this is the dominant or only chert found in later assemblages. The process of standardization is not limited to choice of raw materials. Although very difficult to measure or to demonstrate, it is also apparent in the forms of burins, endblades, scrapers and other artifacts. The greatest range of variation within these tool classes seems to occur in the earliest period, with later assemblages being much more uniform. Perhaps this process, like that involving the choice of raw materials, reflects a population gradually coming to know and adapting to a specific area. If the judgment of increasing uniformity over time is correct, this characteristic would seem to be consistent with the idea of continuity within a long-lasting local tradition.

Transition from Independence I to II

In the previous section, an attempt to understand the cause for diversity within the Independence I complex on northern Ellesmere Island led to the postulate that these sites represented a relatively long-term occupation of the area (from perhaps 4500 to 3200 B.P. in radiocarbon years), during which there was gradual stylistic change in artifact assemblages. The early end of this range is suggested by the Sojourn I and II components, which yielded dates earlier than 4000 B.P., and by similar undated assemblages. The later end of the range is suggested by the undated sites noted in the previous section, which produced assemblages different from those of the "classic Independence I" sites dated between approximately 4000 and 3600 years ago.

The next step in understanding local culture history involves an assessment of the following period, between approximately 3200 and 2500 B.P. in radiocarbon years, which is poorly represented in the High Arctic. Not only are very few radiocarbon dates known from this period, but no sites had produced artifact assemblages which could be construed as probably relating to this period. In Pearyland and northern Ellesmere Island, the period has been seen as a mysterious "interregnum" between the Independence I and II occupations. In the Bache Peninsula area, Schledermann (1990:323) sees a period of abandonment between approximately 3150 to 2850 B.P., followed by an intrusion of Pre-Dorset people from the Canadian Eastern Arctic, bringing with them new ideas and new contacts which form a major break with the earlier Independence/Saqqaq continuum. Schledermann (1991:13) states that "Needless to say, this broad transitional stage of the ASTt in the High Arctic presents the greatest challenge for future research into Palaeo-Eskimo demography in the High Arctic."

The Rivendell Site

In the summer of 1989 a small site on northern Ellesmere Island, which seems to have been occupied during this period, was partially excavated. It provides evidence which suggests cultural and perhaps population continuity between late Independence I and Independence II in the extreme High Arctic.

The Rivendell site is one of a number of Palaeo-Eskimo sites located in the corridor between Lake Hazen and Tanquary Fiord on the west coast of Ellesmere Island. This corridor provides the main hiking trail for visitors to the Northern Ellesmere Island National Park. The 1989 salvage excavation of the Rivendell site (TjFd-10) was done under contract to the Canadian Parks Service.

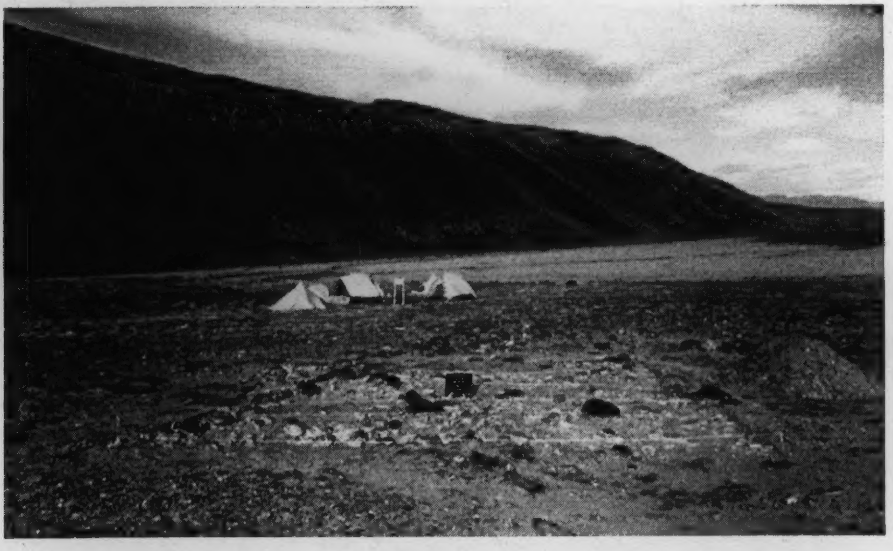


Figure 3-10: The Rivendell site with Feature C in the foreground.

Rivendell is situated on a terrace 6 meters above present lake level, adjacent to the Adams River delta at the western end of Lake Hazen. The site consists of three poorly defined dwelling features with hearths but no clear indication of midpassages; six caches; and several surface scatters of artifacts (Figure 3-10). Surface collection and excavation recovered an assemblage of 107 artifacts, as well as the bones of muskoxen, caribou, hare, birds and fish. Although the subsistence of the occupants seems to have been based upon interior resources, there is evidence for some sea mammal exploitation, in the presence of occasional ivory artifacts.

Almost half of the formed artifact assemblage is comprised of microblades and fragments, a higher proportion than found in most Independence I assemblages. Ten burins and five burin spalls were recovered from the site; the burins are all struck, and there is no evidence of grinding or polish; three of the spalls show definite distal retouch. The Rivendell burins are considerably smaller than those found in most Independence I assemblages, and lack the multiple edge-notching which is a characteristic of many Independence I burins (Figure 3-11).

A number of artifacts from Rivendell are similar to those from Independence II assemblages. These include a large flared endscraper, two lance heads of the "cloven hoofed" type known from Independence II and Early Dorset assemblages (Knuth 1968), needle fragments with flat cross-sections, and a small incomplete limestone lamp (Figures 3-11 to 3-13). Chipped bifaces from the site have straight stems, in contrast to both the contracting or tapered stems of most Independence I weapon points and the side-notches of Independence II points (Figure 3-11). All of the chipped stone tools from Rivendell are made from the distinctive light grey chert which predominates in assemblages assigned to the later phase of Independence I development and in local Independence II assemblages.

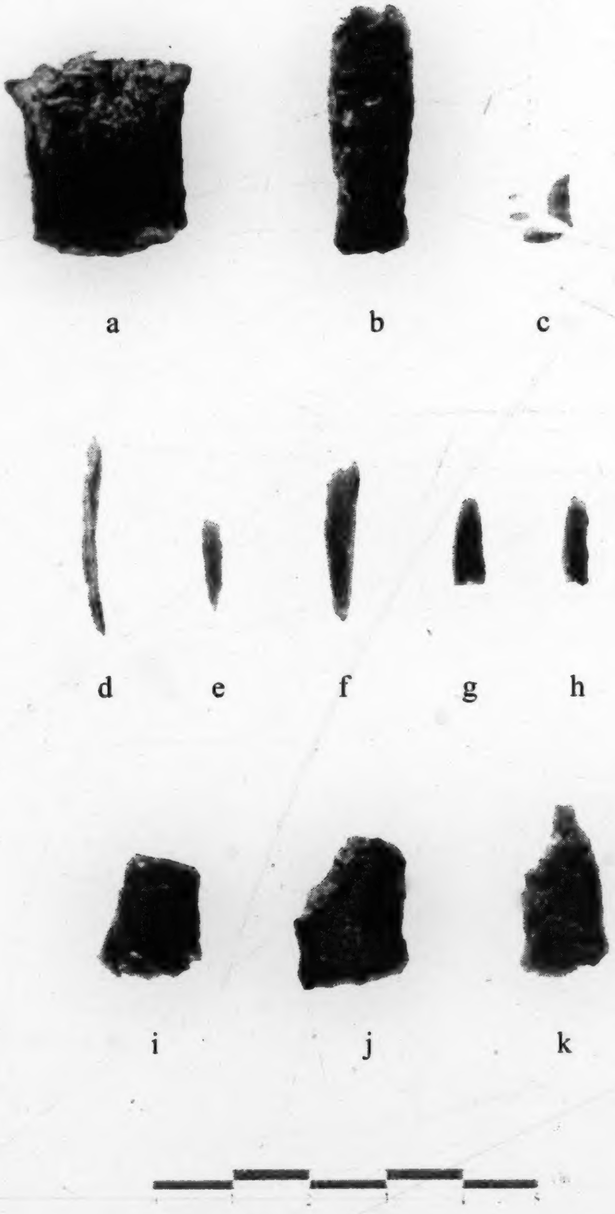


Figure 3-11: Selected lithic artifacts from the Rivendell site: *a*) flared endscraper; *b*) straight stemmed biface; *c*) proximal fragment of straight stemmed biface; *d-h*) burin spalls; *i-k*) burins.

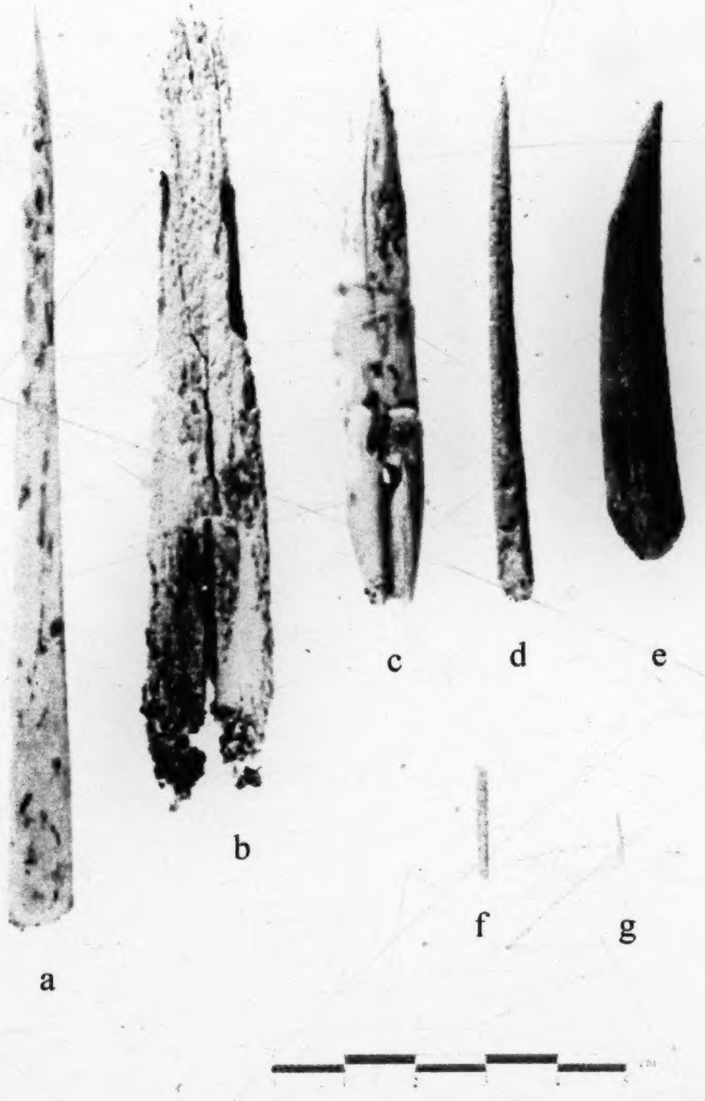


Figure 3-12: Selected organic artifacts from the Rivendell site: *a,d*) awls; *b, c*) cloven-hoofed lances; *e*) flaker; *f, g*) needle fragments.

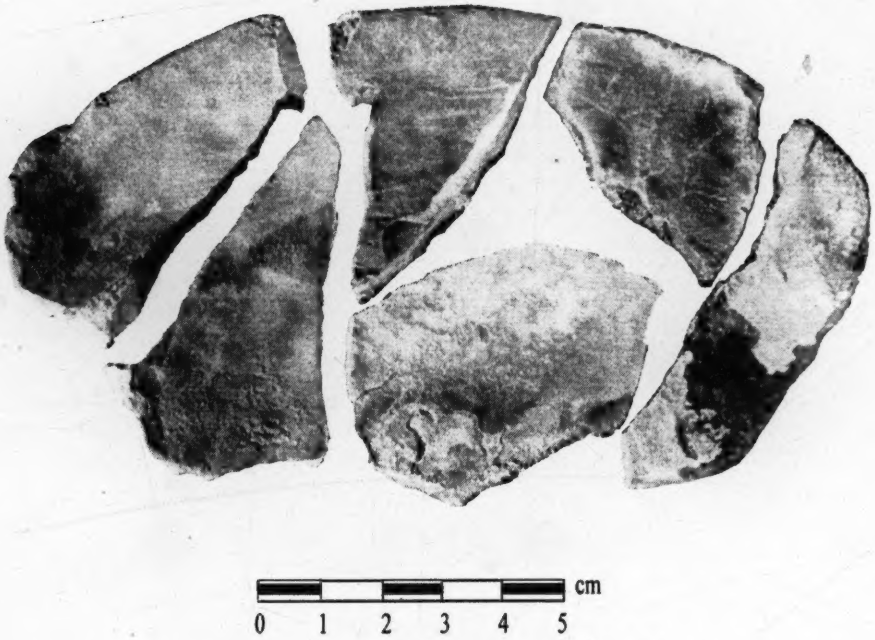


Figure 3-13: Incomplete limestone lamp from the Rivendell site.

In summary, Rivendell shows an intriguing mix of Independence I and II technological traits. Three radiocarbon dates were obtained from land mammal bone recovered from each of the three dwelling features at the site. These dates are: 2800±70 (Beta 35676), 2980±70 (Beta 35677), and 3070±70 (Beta 35678) . The three dates overlap at two standard deviations, and average at 2950±40, suggesting that the site represents a single occupation event which may have occurred about 2900 or 3000 radiocarbon years ago.

Using only radiocarbon dates on willow charcoal or land mammal bone, the Independence I occupation of the area is dated from approximately 4500 to 3200 radiocarbon years ago, with the majority of dates between 4000 and 3600 years ago; the Independence II occupation on northern Ellesmere Island and Pearyland is dated from approximately 2600 to 2200 radiocarbon years ago (Figure 3-14). The dates from Rivendell, therefore, place the site mid-way between the Independence I and II occupations of the region north of 80 degrees.

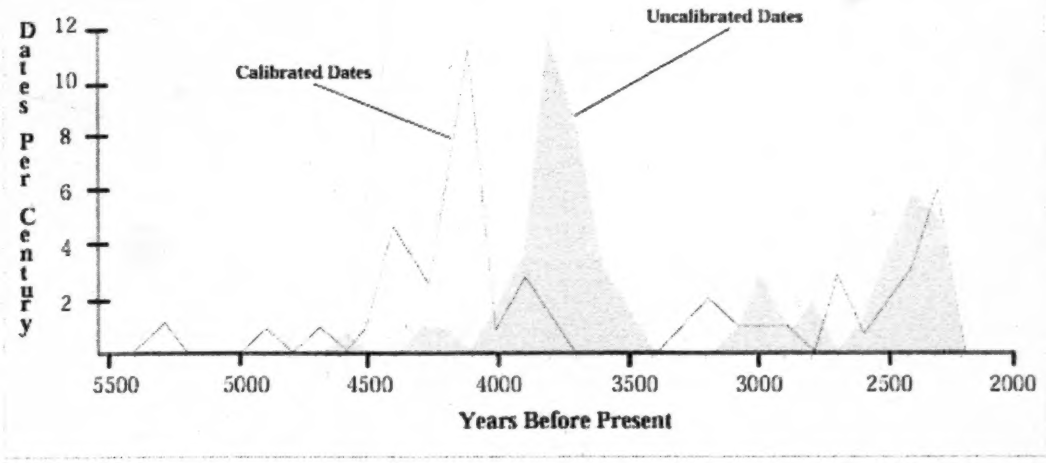


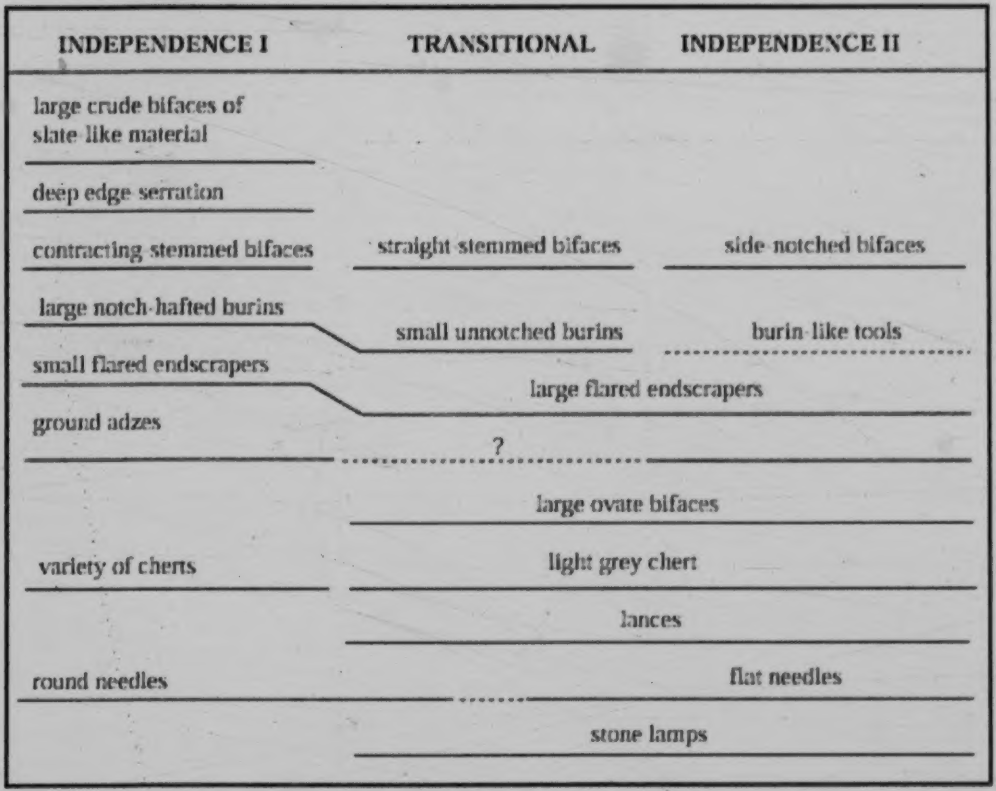
Figure 3-14: Distribution of radiocarbon dates from sites north of 80°.

The Rivendell site has produced an assemblage with traits reminiscent of both Independence I and II, and which dates to the previously unknown period separating Independence I and II occupations. These facts are suggestive of local continuity between the Independence I and II complexes, but they are not proof that such continuity did occur. The site might represent an occupation by newcomers from outside the area, bringing with them a “Late Pre-Dorset” or “Proto-Independence II” technology. This interpretation would be consistent with Schledermann's (1990) postulate of a late Pre-Dorset movement northwards into the Bache Peninsula region. The Rivendell assemblage shows certain similarities to the perhaps contemporaneous Late Pre-Dorset assemblages from the Bache Peninsula area: small burins with no hafting notches, small straight-stemmed points, and large numbers of microblades including specimens with retouched hafts.

Alternately, the Rivendell site may be seen as a continuation of the Independence I sequence described in the previous section, and the assemblage as the logical product of the technological changes which were occurring through time within the local Independence I tradition. The later phases of this tradition, as described in an earlier section, are characterized by assemblages including straight stemmed bifaces; unnotched burins; large flared endscrapers; and the predominant use of light grey chert. These later Independence I assemblages share a number of specific stylistic characteristics with that from Rivendell. It appears feasible, therefore, to derive the Rivendell assemblage out of the local Independence I tradition rather than requiring that it be introduced to the area by people arriving from the south.

Figure 3-15 summarizes the major technological characteristics of the Palaeo-Eskimo sequence on northern Ellesmere Island, from Independence I beginning sometime after 4500 radiocarbon years ago, to Independence II terminating around 2200 years ago. The “Transitional” category is based on the assemblages derived from later Independence I sites and from Rivendell, and may be thought of as dating between approximately 3600 and 2900 radiocarbon years ago. The chart notes continuities and discontinuities in the technology of the different cultural periods, and indicates that change appears to occur through gradual stages, rather than through sudden replacement of large numbers of technological elements.

It should also be noted that subsistence throughout the Palaeo-Eskimo period seems to have been based almost entirely upon terrestrial and riverine resources (muskoxen, caribou, hare, waterfowl, and fish). The dwelling with a central hearth and midpassage feature is found throughout both Independence I and II occupations, although in most periods less than half of the identifiable dwelling structures conform to this type.



INDEPENDENCE I	TRANSITIONAL	INDEPENDENCE II
large crude bifaces of slate like material		
deep edge serration		
contracting stemmed bifaces	straight stemmed bifaces	side notched bifaces
large notch hafted burins	small unnotched burins	burin like tools
small flared endscrapers	large flared endscrapers	
ground adzes	?	
	large ovate bifaces	
variety of cherts	light grey chert	
	lances	
round needles		flat needles
	stone lamps	

Figure 3-15: Summary of changes in technological traits through the Independence sequence.

Discussion

The previous section has attempted to demonstrate that the variability in Palaeo-Eskimo assemblages from northern Ellesmere Island resulted from gradual change over a period of a millennium or more. If this change is to be interpreted in terms of continuous occupation of the area by a discrete and relatively isolated local population, a number of questions need to be addressed.

1) Could the area have been continuously occupied by a local population for a period of one or two millennia?

A very subjective estimate of the number of people living on northern Ellesmere during the Independence period is about 100 people. This estimate of 100 people living in 30,000 sq. km. is on the same order of magnitude as Knuth's estimate of 200 people for 100,000 sq. km. of Pearyland. Together, these contiguous groups could have comprised a somewhat small but adequate breeding population of approximately 300 people. A group of this order of magnitude can be seen as analogous to the small local populations which were characteristic of the Historic Inuit in the more marginal regions of the central and eastern Arctic. The Polar Inuit with an estimated population of 200 people in 1850 (Gilberg 1984: 578), might be cited as evidence that a group of this size can exist in relative isolation under High Arctic conditions. Although the effect of European influence on the populations estimated by the Fifth Thule Expedition in 1922-23 is not clear, these estimates of 259 for the Netsilik Inuit, 164 for the Back River Inuit (Rasmussen 1931), and 467 for the five groups of Caribou Inuit (Birket-Smith 1929) are on roughly the same order of magnitude.

2) Can a long-term adaptation be based on muskoxen, and other interior resources?

Arctic land mammal resources are generally thought of as less stable than sea mammal or fish resources, and more vulnerable to both human predation and environmental disasters. But this assumption has not been subjected to close analysis, and would seem to be questionable on the basis of archaeological evidence for long-term prehistoric occupations of the Barren Grounds region to the west of Hudson Bay. Likewise, the long term population dynamics of muskoxen, the primary prey species of northern Ellesmere Island, has not been extensively studied. The explosion of muskox populations on Banks Island during the past three decades, for example, was totally unexpected and unexplained. This island, with an area approximately half the size of the northern Ellesmere Island-Pearyland region and characterized by similar summer temperatures and vegetation growth ("prostrate shrub zone"; Edlund 1987), now supports a muskox population estimated at over 40,000 animals. Under the somewhat warmer climatic conditions which are believed to have prevailed at the time of early Palaeo-Eskimo occupations, High Arctic muskox populations may have been significantly larger and more stable than those known from the past century.

Northern Ellesmere Island and Pearyland comprise a very large area (130,000 square kilometers stretching over a linear distance of 1200 kilometers). Local muskox populations may have been unstable, but it seems unlikely that a single disaster (disease, winter icing, or predation) could have decimated the population over the entire region. In addition, we may assume that like all known Arctic hunting peoples, the early Palaeo-Eskimos were omnivorous hunters, who had access to food resources (fish, birds, small mammals) other than muskoxen and caribou. These food resources, as well as food stored from more productive seasons, would have helped small local groups to survive through seasons and episodes of decline in muskox populations. Theoretically, therefore, a small and relatively isolated human population could probably have survived here for a considerable length of time, if they had the transportation and social connections to allow them to move over long distances within the region of northern Ellesmere Island and Pearyland. Rowley (1985) notes that in traditional Inuit societies, mobility played a very important role as a means of reducing risk at times of environmental stress. We may probably assume that a similar strategy was utilized by the early Palaeo-Eskimo groups of northern Ellesmere Island and Pearyland.

3) Is there technological evidence of population replacement or massive cultural influence from outside the area at any point in the Independence sequence?

The most likely period for such an event to have occurred is that which saw the change from an Independence I to an Independence II/Early Dorset technology. At this time a change in local technologies occurred across the entire eastern Arctic. However on northern Ellesmere Island, as has been shown, the change does not occur simultaneously across the entire technology. These gradual changes do not suggest a major population influx or replacement, but the cumulative effect of several small-scale contacts with other Arctic populations, occurring over a relatively long period of time.

Some Independence II/Early Dorset traits, such as cloven-hoofed lances, occur here earlier than they do in the Low Arctic; lances similar to those at Rivendell show up in the 23 metre level of the Jens Munk site at Igloolik, dated a few centuries later than

Rivendell (Meldgaard 1962). Lamps similar to that from Rivendell are reported from Greenland Saqqaq; this trait may have reached northern Ellesmere from Greenland via the Saqqaq-like complexes of the Bache Peninsula. On the other hand, given our very small assemblage sizes, such lamps may have been used throughout the Independence I sequence, as well as the Saqqaq sequence. Other traits characteristic of Independence II and Early Dorset, such as burin-like tools and side-notched endblades, apparently arrived in the area some time after the Rivendell occupation. Traits such as ground slate tools do not appear to have reached the area at all.

The concept of the "Independence II/Early Dorset complex" as a series of isolated technological traits, each passing through local populations as an individual idea, fits with the picture presented earlier for northern Ellesmere Island: that is, an area occupied by a people who had achieved a unique adaptation to High Arctic terrestrial and riverine resources, very marginal to developments in more southerly regions, and relatively isolated from other populations. The types of changes which can be detected in the technologies of this area do not need to be explained by immigration or massive cultural diffusion. Instead, they are consistent with what we might expect from sporadic contacts with distant populations—small occasional exploration parties meeting by accident, or sporadic trade between individual family groups.

The appearance of Independence II/Early Dorset complexes across the eastern Arctic does not everywhere seem to have been a case of the diffusion of a few technological traits. In some regions, the appearance may have coincided with population movements. At Port Refuge on Devon Island, for example, Independence II assemblages seem to occur suddenly after a hiatus of several centuries in local occupation (McGhee

1976). On northeastern Devon Island, Helmer (1991: 314) sees some transitional elements in the late Pre-Dorset Rocky Point Complex, but thinks that local continuity is unlikely between this complex and the Independence II/Early Dorset Cape Hardy Complex which appears in the area around 2700 B.P.

In other regions, however, we seem to have a situation similar to that of northern Ellesmere Island. In northern Labrador, 2500 kilometres to the south, Cox (1978, 1992) has outlined what he sees as a development from a late Pre-Dorset complex (which bears some resemblance to Rivendell) to Groswater Dorset, occurring at approximately the same time as the change from Rivendell to Independence II. But "Groswater Dorset", although sharing a few traits with Early Dorset/Independence II in more northerly regions, is a very distinctive local pattern of individual traits, only some of which are shared with more northerly complexes. Similarly, in the Bache Peninsula region of eastern Ellesmere Island, Schledermann (1990: 325-6) defines a "Transitional Stage" which he specifically compares with Groswater Dorset. Schledermann sees the break in local population continuity as having occurred a few centuries earlier, with the arrival of late Pre-Dorset people from the south. The development of the Transitional Stage/Early Dorset is interpreted as the result of a complex process involving diffusion of technological traits both from Greenland Saqqaq, and from the Early Dorset developments of the Canadian Arctic.

Across Arctic Canada in this period between roughly 3000 to 2500 years ago, it would seem that events were occurring which stimulated the development and rapid spread of Dorset-like technological traits, and in some regions the expansion of Dorset populations. But whatever the root cause, there is little evidence that the process involved large scale population movements or total cultural replacements in regions such as northern Ellesmere Island or Labrador.

The case seems to be particularly clear on northern Ellesmere Island, where the new technological traits appeared within the context of a continuing specialized adaptation to the interior resources of the extreme High Arctic. The apparent uniqueness of this adaptation, so different from any known among either historic or prehistoric Arctic hunting peoples, suggests that it was likely developed only once by the earliest Palaeo-Eskimo occupants of the region, rather than duplicated by two or more subsequent and unrelated populations.

Conclusions

To conclude, the interpretation of the early prehistory of northern Ellesmere Island, which has been presented in this paper, has a number of implications:

1) that among Arctic hunting peoples, such as the Palaeo-Eskimos, large-scale population movements, or massive acculturation, need not be postulated to explain changes such as those from late Independence I to Independence II. Technological change can diffuse through widespread populations by means of occasional and sporadic contacts.

2) that in reconstructing Palaeo-Eskimo prehistory, archaeological units such as "Independence I" or "Predorset" should not be thought of as representing actual past populations. Past events might be more clearly understood in terms of a model based on the society of the traditional Inuit: a mosaic of small named local groups of a few hundred

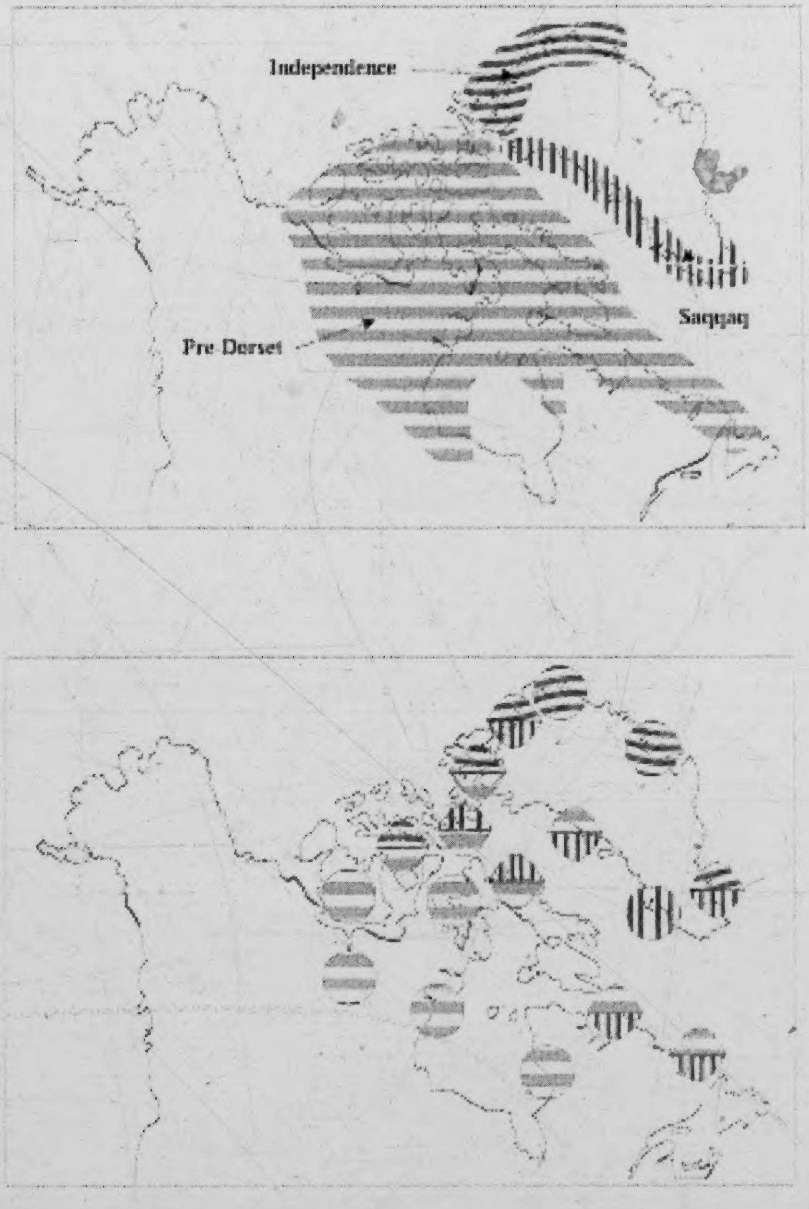

Independence
Saqqaq
Pre Dorset

Figure 3-16. The traditional and the proposed views of early Palaeo-Eskimo occupation in Arctic Canada and Greenland.

people, each sharing most characteristics with adjacent groups, and each changing along its own trajectory over time (Figure 3-16). Such a model at least seems appropriate for prehistoric groups on the marginal fringes of Arctic cultural developments. Taken together with the previous statement, that technological change among such populations can occur as the result of minimal contact with other groups, this suggests that a "core-pulsation model" is not appropriate for the extreme High Arctic.

3) that for purposes of understanding the dynamics of cultural continuity and change, regions such as northern Ellesmere Island which are marginal in many respects, may not be at all marginal to our archaeological efforts to understand the Palaeo-Eskimo way of life. The fine processes of culture change may be more evident in such areas, since they are not obscured by the clutter and noise of extensive occupation and relatively frequent contacts characteristic of peoples living in less remote regions of the Arctic.

Finally, the hypothesis of occupational and cultural continuity which has been proposed for the extreme High Arctic, should not be taken to imply that a similar degree of continuity should be expected in any or most other Arctic regions. If such continuity occurred in far northern Ellesmere Island and Greenland, it did so because of isolation from richer and more densely populated areas to the south, and because of a unique longlasting adaptation to a specific set of environmental circumstances. The possibility of such a singular event having occurred should not be ignored in our search for patterns of historical development. Biologists are becoming increasingly aware of the important role which unique circumstances and events, the principle of contingency or "just history" (Gould 1989), have played in the evolutionary process. Perhaps archaeologists, in their fascination for patterns in historical process, risk overlooking the significance of the unique circumstances and events which effected the lives of specific groups of people. The possibility that unique developments are more important than the patterns which can be derived from their study, supports the plea made earlier in this paper for greater attention to the study of local populations, as the basis for a more complete knowledge of Arctic prehistory.

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Chapter 4: The Variety of Artistic Expression in Dorset Culture

In his book entitled *Eskimo Sculpture* Jørgen Meldgaard (1960a:11) wrote that "a striking feature of Eskimo culture when studied as a whole is the quite amazing variety of artistic expression." The truth of this statement is apparent to anyone who encounters the carvings, music and narrative art of contemporary Inuit. It is equally apparent in the variety of specimens residing in ethnographic collections made over the past century, ranging from Alaskan masks to Central Inuit clothing, and to the finely decorated tools and *tupilak* carvings of Greenland. When one includes, as does Meldgaard, the ancient products of the Eskimo cultural tradition—the elaborately ornamented weapons of the Old Bering Sea culture, the fantastic burial art of Ipiutak, and the unique carvings of the Dorset culture—the variety of Eskimo artistic expression becomes even more remarkable.

While the degree of variability in the entire Eskimo cultural tradition is well appreciated, most scholars who have approached the subject have tended to treat the individual cultural expression of Eskimo art as a phenomenon that can be classified and typified in order to better express the differences between different cultural traditions. Thus "Dorset art," or "Ipiutak art" or "Alaskan Eskimo masks" are defined in a way which allows them to be compared with other such classes. Such definition risks implying a degree of uniformity which does not actually exist in the artistic tradition. The present paper approaches the artistic production of the Dorset culture people through the perspective of the question: is “Dorset art” as unitary a phenomenon as most scholars have generally assumed it to be?

Meldgaard's (1960a: 24-26) brief description of Dorset art noted the vast spatial and temporal range of Dorset culture, and suggested that there was a significant change in the amount of art produced in the late phase of the culture's existence. However, the style and function of the art was presented as a uniform manifestation which could be simply contrasted with the art of the contemporaneous Okvik and Ipiutak cultures. The same approach was taken by Taylor (1967) and Swinton (1967) in their classic joint papers which form the basis of most archaeological opinion relating to the art of the Dorset culture. Taylor (1967:38), citing several examples of very similar specimens recovered from locations hundreds of kilometres apart, specifically noted the “geographic continuity or cultural consistency over the vast area” of Dorset occupation. Both Taylor and Swinton recognized the Dorset art recovered from subarctic Newfoundland as a distinctive regional variant, but the art of the vast Arctic region was presented as something which did not vary significantly either temporally or geographically.

The approach taken by these authors was, of course, conditioned by the material which was available at the time of their studies. Aside from a few scattered specimens from elsewhere, Meldgaard's collection of Dorset carvings was heavily centred in the excavations which he and others had carried out in the region of Igloolik. Taylor's and Swinton's discussion was focused on only 125 specimens, and again most of these came from the adjacent regions of Hudson Strait, Foxe Basin and northern Baffin Island. The accelerated archaeological activity of the past decades has multiplied the corpus of known Dorset specimens, and many of the newer collections derive from the Central

Arctic, High Arctic, Labrador and Greenland where Dorset culture was poorly known a few decades ago.

The first attempt to explicitly study variability in Dorset art was carried out by Lyons (1982), whose innovative analysis compared the distribution of stylistic elements in five major collections comprising 585 specimens. On the basis of this work, Lyons was able to define stylistic differences between three Middle Dorset collections from the Igloolik region, northern Baffin Island and Newfoundland; collections from the Late Dorset period were distinctive from the earlier ones, but did not show the same pattern of regional differences. Lyons' interest was not in defining or explaining the nature of variability in Dorset art, but in using degrees of stylistic difference to test hypotheses relating to the culture history of the Dorset people. Her findings provided confirmation for the general impression of artistic differences which archaeologists had formed as collections representing different regional and temporal variants of Dorset culture had accumulated.

The definition and measurement of artistic variability is a difficult task, as the phenomenon is too complex to easily reduce to an objective and systematic analysis. Lyons should be commended for an admirable attempt at undertaking such a systematic inquiry, but she did not extend it to a more comprehensive treatment of the subject. No other attempts have been made to carry out such a treatment of Palaeo-Eskimo art, and the current paper does not pretend to do so. The following notes are based primarily on an examination of the approximately 800 carvings and decorated objects in the Palaeo-Eskimo collections of the Canadian Museum of Civilization, and are presented as a preliminary suggestion of the extent and nature of variability which exists in this material.

It is apparent that variation in Palaeo-Eskimo art occurs along several axes, which act in concert to define the form of individual specimens, and the nature of individual assemblages. The most apparent of these axes may be summarized as follows:

Temporal Variation:

Information on the relative temporal positions of Dorset assemblages began to develop with Meldgaard's (1960b) excavations of the long occupational sequence in the vicinity of Igloolik. Stylistic comparison with assemblages from this sequence has remained a mainstay of Dorset temporal ascription, in conjunction with an accumulating series of radiocarbon dates. Meldgaard (1960a:24) was the first to recognize that the amount of artistic activity was not constant throughout the Dorset sequence, but that it increased significantly in the late period dating to the centuries around and after AD 1000.

For some time, this was the most recognized aspect of temporal variation in Dorset art. Taylor (1967: 40) stated merely that "Temporal variation is another sizable question" which he did not attempt to answer; no reference was made to temporal position in the captions to the illustrations which accompany the Taylor and Swinton papers.

The first attempt to depict the processes of temporal variation which operated in Dorset art were made in a brief photograph caption published by Meldgaard (1960b: 70), in which he illustrated a series of "floating bear" representations developing from a relatively naturalistic to increasingly abstract forms over a period of five centuries.

Swinton (1967:47) questioned the dating of this series, but appears to have concurred with the suggestion that a process of abstraction was operating over time in the activities of Dorset artists. Current knowledge continues to support the view that the flat and spatulate forms of abstract bear figures in Late Dorset assemblages developed from the skeletonized floating-bear images which first appear in Middle Dorset assemblages. However, parallel processes of stylistic change have not been defined in any other series of forms, and the very abstract bear images occur in the same Late Dorset assemblages as the most naturalistic and realistic portrayals of bears known from any Dorset period.

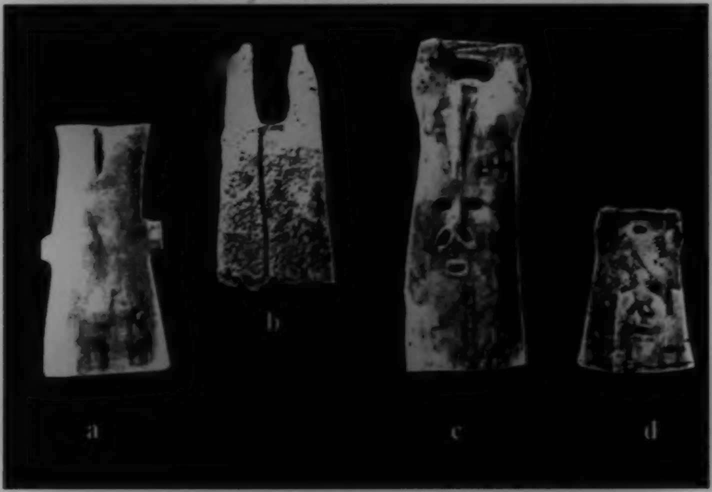

Figure 4-1: Four forms of ivory "shaman's tube" *a)* QiLd-2:12 (Early Dorset); *b)* KkHh-3:914 (Middle Dorset); *c)* NiHf-4:115 (Late Dorset); *d)*SiHw-1:453 (Late Dorset). Height of SiHw-1:453: 45 mm. Canadian Museum of Civilization.

The processes of temporal variation appear to be considerably more complex than the actions of a simple rule of increasing abstraction. For example, while "floating bears" become more abstract through time, the ivory containers termed "shaman's tubes" become increasingly complex and representational (Figure 4-1). The earliest known forms of these artifacts are simple hollow bell-shaped objects with small projections extending from the sides. Middle Dorset assemblages contain forms in which the upper corners have been transformed into a pair of bear heads facing one another across the top of the object; the bear heads are later transformed into walrus heads, with the tusks interlocking across the top of the container. In Late Dorset assemblages, the tubes with walrus heads also have sculpted or cut-out human faces added to the flat sides of the containers, and in some instances these are supplemented by other animal representations.

Figure 4-2: Antler baton carved with representations of human or human-like faces (SiHw-1:788). Length 103 mm. Canadian Museum of Civilization.

Other aspects of Dorset art appear to be subject to another process of temporal change, involving neither increasing complexity nor abstraction, but a simple increase in the varieties of representation over time. This is most apparent in representations of the human face, which in Pre-Dorset and Early Dorset assemblages generally approach the simple and elegant form represented in the miniature mask from the Tyara site.

Late Dorset assemblages also contain miniature masks, but the faces are not as simple or uniform, and human faces are also used as elements in objects as diverse as the shaman's containers noted above, and antler batons which are covered with a diversity of human and human-like representations (Figure 4-2). The increase in artistic activity which is apparent in Late Dorset assemblages is associated with a general increase in variability, which applies to other objects as well as representations of the human face.

Another source of temporal variation appears in the existence of certain forms which occur in apparently uniform styles for a limited segment of the Dorset sequence. Bone disks which are perforated in the centre and marked with a pattern of radiating lines, usually numbering eight or sixteen, are found only in Early and Middle Dorset assemblages. Several other forms, including the antler batons mentioned above, are known only from the final few centuries of the Dorset sequence. The occurrence of such forms appears to be independent of any temporal process of development, providing an additional level of complexity to our attempts to understand the nature of variability through time. Such understanding must await more precise control on the temporal positions of most Dorset culture assemblages.

Regional Variation:

Bronshtein and Plumet (1995: 42) have recently minimized the extent of regional variability in Dorset art, perceiving it as a phenomenon which evolved through uniform and contemporaneous changes over the entire area of Dorset occupation. However, as was noted earlier, scholars have long recognized the distinctive character of Newfoundland Dorset art, and Lyons (1982) analysis documented the existence of two other regional traditions which existed during at least a portion of the Dorset temporal spectrum. The nature of such variation appears to be more complex than may be implied by simply ascribing it to regional cultural traditions which have diverged from one another as a result of isolation from one another.

This problem might be profitably approached through the suggestion that some of the variation which has been defined may be assemblage-specific rather than regional. The Button Point assemblage, for example, which Lyons used to define a distinct regional tradition, appears to represent a uniquely heavy emphasis on ritual activity and the artifacts associated with that activity: masks, drums, and a variety of small wooden figures (Figure 4-3). Although this assemblage shares certain elements with material recovered from other sites in adjacent regions of northern Baffin Island, it stands apart from these assemblages in the ritual-centred character of the majority of its artifacts.

Another such example is suggested by the Late Dorset assemblage from Brooman Point in the central High Arctic. While sharing many elements with the widespread Late Dorset tradition, this collection is unique in the large number of naturalistic animal representations, many of which are not perforated for attachment as amulets (Figure 4-4). This characteristic is not shared with roughly contemporaneous assemblages from Little Cornwallis Island, located only a few kilometers away. One suspects that more complete preservation of subarctic Dorset assemblages might indicate that the art of the Port-aux-Choix collection shares only general characteristics with other Newfoundland Dorset assemblages from sites in less environmentally rich locations.

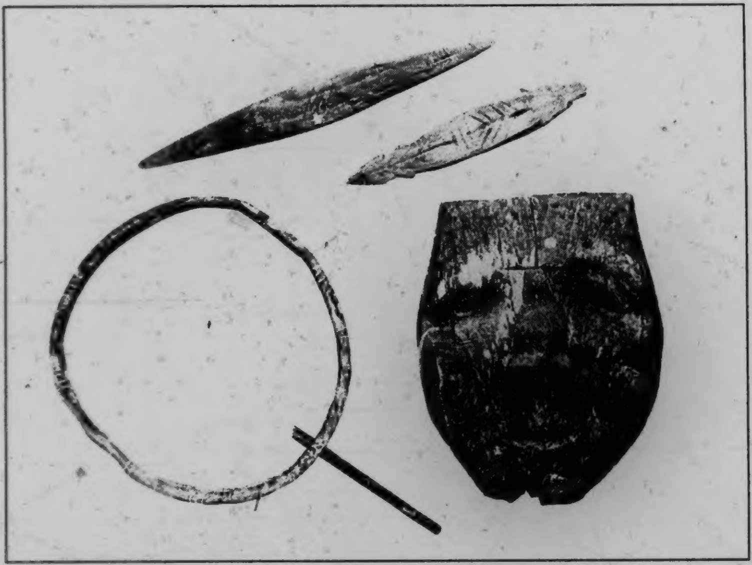

Figure 4-3: Wooden specimens from Button Point, Bylot Island. Clockwise from upper left: PfFm-1:1780/1973 ("miniature kayak"); PfFm-1:1767 (abstract bear); PfFm-1: 1772-1777 (mask); PfFm-1:1750 (drum). Height of PfFm-1:1772: 175 mm. Canadian Museum of Civilization.

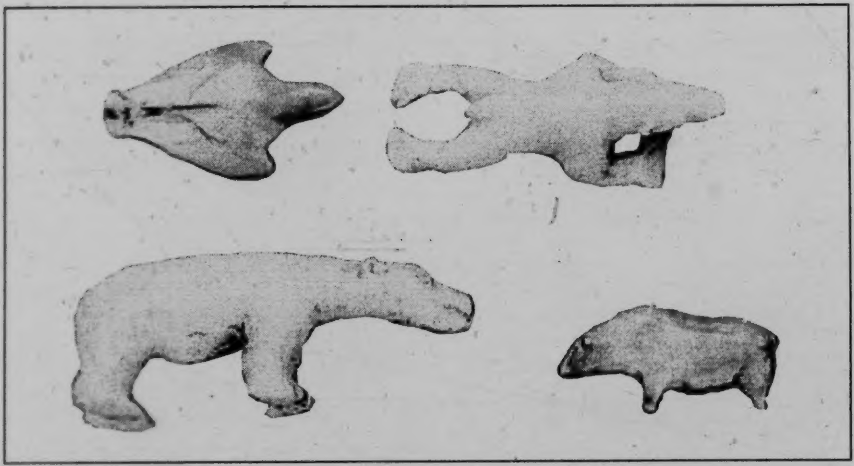

Figure 4-4: Ivory carvings of animals from Brooman Point, Bathurst Island. Clockwise from upper left: QiLd-1:2291 (falcon); QiLd-1:819 (swimming bear); QiLd-1:2304 (muskox); QiLd-1:2299 (standing bear). Length of QiLd-1:2299: 41 mm. Canadian Museum of Civilization.

The degree of difference between the artistic materials recovered from individual sites suggests that an analysis in terms of site assemblages rather than regional cultural traditions is more likely to provide a clear picture of Dorset cultural variability. Regional Dorset populations might usefully be considered as a mosaic of communities, each with its own unique cultural tradition, and continuing that tradition through time as they interact at various levels with other communities. The assemblage of carvings and decorated artifacts from any site would be conditioned by how this local tradition interpreted the broad cultural conventions of the evolving Dorset cultural tradition, as well as by the nature of activities which were carried out at this particular site. The latter factor would include the kind and level of ritual activities which were associated with particular classes of artifacts, as in the example of Button Point. It would alsoinclude subsistence activities, which appear to influence the choice of animal subjects represented at some sites; for example, carvings portraying walrus are most common in collections from the Igloolik region, where other archaeological evidence suggests a strong emphasis on walrus hunting.

In sum, regional differences have long been known to exist in Dorset art, but the nature of regional variation appears to be considerably more complex than can be simply ascribed to regional cultural traditions, and is related to a number of interacting variables which are only poorly understood. Analysis in terms of the nature and amount of intra-regional variation between individual assemblages may be useful in elucidating the processes which produced variability between the art assemblages produced by contemporaneous Dorset groups in various regions of the Arctic.

Intra-Assemblage Variation:

Perhaps the most striking aspect of variability in Dorset artistic production is that which occurs within single assemblages, including assemblages which appear to relate to a single relatively short-term occupation by a small community. This type of variability must be a reflection of many factors, including the number of people involved in artistic production and the variety of other activities in which they were involved. Swinton's (1967:39) argument that Dorset artistic production was carried out by a relatively small number of skilled shaman-artists seems to be questioned by the amount of variability in the form and style of specimens in the numerous assemblages which are now available for study.

It is now apparent, for example, that decoration or the application of symbolic markings such as stylized skeletons or faces, is not limited to the ritual objects which Swinton (1967:37) considered to be the equipment of shamans. Such markings are found not only on weapons such as harpoon heads, where they may have been associated with hunting magic, but on utilitarian artifacts such as knife handles. The differing manner in which such markings are made on individual specimens, as well as the differing amounts of care taken in their application, suggest that such "artistic" activity was generally distributed throughout the community, and was not the preserve of the community shaman. Such an interpretation is supported by the wide range of artistic ability and craftsmanship which is apparent in the production of representational carvings. The concept that Dorset artists were uniformly skillful appears to have been influenced by our tendency to select only the best pieces for illustration in publications dealing with the subject; examination of entire assemblages reveals a much wider range of competence than is apparent from the perusal of publications on Dorset art.

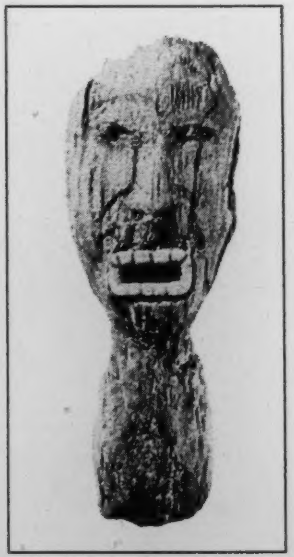

Figure 4-5: Human figure, wood with inset ivory teeth, northern Ellesmere Island (SlHq-1:29). Length 99 mm. Canadian Museum of Civilization.

Even in the case of specimens from a single assemblage representing the same class of standardized object (such as shamans' containers, spatulate objects, or antler batons), rarely is the degree of similarity sufficiently great to suggest that the specimens were produced by the same individual. Instead, one is impressed by the amount of individual variation which is expressed while producing an object which obviously adheres to a complex cultural prescription. This intimation that individual expression was an important characteristic of Dorset art is supported by the large number of specimens which are unique in concept and realization. Representations of a nesting eider duck with eggs carved on her breast, a diving falcon with outstretched talons, or a human head with inset ivory teeth (Figure 4-5) are each unique but not unexpected in the corpus of Dorset art, suggesting that artistic activities were not as constrained by cultural mandates as has been commonly assumed.

Conclusions:

This paper argues that an examination of the archaeological assemblages which have accumulated over the past decades indicates that the phenomenon known as "Dorset art" encompasses a much greater range of variability than has been generally assumed. An admittedly subjective review of this material suggests that the nature of variability, through time and through the contemporaneous social units of the Dorset world, was extremely complex. Earlier scholars are probably correct in recognizing that this art was closely related to shamanic religious practices. However, interpretations of Dorset art as the product of a uniform, conservative and constrained shamanic tradition has not facilitated a recognition of the variability apparent in the art, nor discussions of the meaning of such variability.

The carvings and decorated objects left by the Dorset people provide a unique opportunity to glimpse the artistic tradition of a small-scale society over a period of three thousand years. We should not be surprised to find that this art appears to have been subject to complex processes of innovation and change, similar to those which have influenced the development of artistic traditions in larger and more completely documented societies.

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Chapter 5: Shamanism and the Iconography of Palaeo-Eskimo Art

Introduction

The Palaeo-Eskimos were the first widespread occupants of Arctic North America. They are associated with archaeological complexes related to the Arctic Small Tool tradition, among them the Denbigh Flint Complex, Independence, Saqqaq, Pre-Dorset and Dorset cultures. The archaeological evidence of their occupation extends from southwestern Alaska to northeastern Greenland. The Palaeo-Eskimos first appeared between 4000 and 5000 years ago, and continued in some regions of the Central and Eastern Arctic until well into the past millennium when they disappeared from the archaeological record (Figure 5-1). Their demise is often related to the eastward movement of ancestral Inuit people from their original homelands in Alaska (McGhee 1996).

An association between Palaeo-Eskimo art and shamanic thought has long been recognized, and was explicitly stated in an important pair of articles published in 1967 by archaeologist W.E. Taylor Jr. and art historian George Swinton. Taylor and Swinton, in company with other scholars who have examined the art of the Palaeo-Eskimos, usually dealt with "shamanism" or "shamanic thought" as a distinctive and uniform entity characterizing the world-view and religious beliefs of peoples occupying the circumpolar regions of the globe. If specific relationships have been proposed between the shamanic art of the Palaeo-Eskimos and the religious thought of a particular northern people, the suggested link has almost invariably been with Inuit culture, as it is known from Arctic Canada and Greenland.

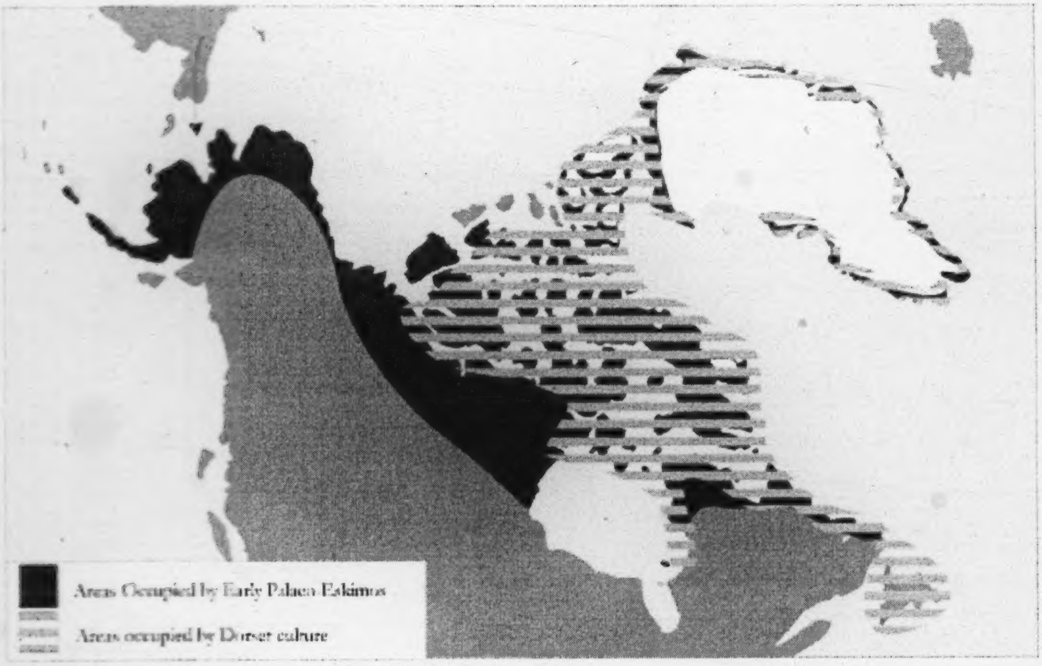
Areas Occupied by Early Palaeo-Eskimos
Areas occupied by Dorset culture

Figure 5-1: Map showing areas occupied by Early Palaeo-Eskimos and the Dorset culture.

Such an association between Palaeo-Eskimo and Inuit cultures seemed natural when Taylor and Swinton were writing their articles in the late 1960s. At that stage in our knowledge of Arctic prehistory, most archaeologists assumed some form of ancestor-descendant relationship between the two widespread prehistoric cultures known from Arctic North America. Such a relationship was implied in the name Palaeo-Eskimo which was derived from the speculative historical ethnology of the early twentieth century, and was readily attached to Arctic Small Tool tradition materials.

Although similarities had been noted between Arctic Small Tool tradition artifact styles and those of the Siberian Neolithic, the tradition was viewed as having developed primarily in Alaska, perhaps from early cultures of the Alaskan interior or the Aleutian Islands. The Arctic Small Tool tradition was thought to have given rise to a series of more recent Alaskan cultures, and to have made a major contribution to the cultural ancestry of the Eskimo peoples, if not providing its entire foundation. This relatively simple picture of Arctic prehistory has not stood the test of time and more adequate archaeological knowledge. On the one hand, archaeological work in northern North America has failed to discover a possible ancestor for the Arctic Small Tool tradition/Palaeo-Eskimo materials which appear suddenly in Alaska at some time shortly after 5000 years ago. The archaeology of northeastern Siberia, on the other hand, has extended our knowledge of the existence of Palaeo-Eskimo-like Neolithic cultures at the same time period (Mochanov 1969). As a result, the Siberian Neolithic origin of the Palaeo-Eskimos has become a widely accepted view among prehistorians working in Arctic North America. Further, it is increasingly likely that Eskimo origins are grounded in the ancient cultures of southern Alaska, adjacent to the homelands of the linguistically-related Aleuts (Dumond 1998). If the Palaeo-Eskimo peoples of central and northern Alaska played a significant role in the development of Inuit culture, this role is not clearly apparent in the archaeological record.

In view of the current reconstruction of Arctic prehistory, it no longer seems appropriate to look exclusively to Inuit shamanic thought as a means of interpreting the imagery of Palaeo-Eskimo art. Rather, the postulated Siberian origin of the Palaeo-

Eskimos suggests that more fruitful interpretations may be derived from comparisons with the shamanic thought and practices of Siberian peoples.

Before attempting to investigate such comparisons, one must acknowledge that archaeological evidence is clearly inadequate as a means of reconstructing the totality of a past belief system. Although religious practices can to some extent be reconstructed from the physical artifacts associated with these practices, the systems of mythological beliefs which give rise to or validate religious rites and practices remain largely hidden. As well, even a superficial examination of the ethnographic literature indicates that circumpolar shamanism is not the broad and uniform entity which is implied in much of the work attempting to interpret the art of the Palaeo-Eskimos. Rather, the traditional worldviews and religious beliefs of northern peoples as described over the past one or two centuries show significant diversity across cultural boundaries. It is also apparent that our knowledge of the shamanic beliefs of any individual culture is limited both by the inherent complexity of belief systems and the inadequacy of ethnographic interpretation and reporting of those systems. Saladin d'Anglure (1997) has recently pointed out that the study of shamanism has been largely neglected among the Canadian Inuit since the time of Rasmussen, as a result of the linguistic deficiencies of ethnologists, and their frequent dependence on missionary hosts in Inuit communities. Similar problems have probably constrained the study of shamanism among other northern peoples, or have resulted in an incomplete or confused understanding of an extremely complex subject.

Given these constraints in the archaeological evidence and in ethnographic knowledge of northern shamanic practice, is it possible to make useful observations on the relationship between shamanic thought and the iconography of Palaeo-Eskimo art? It is the position of this author that a limited range of observations can be made, and that the importance of these inferences is augmented by the preservation of the Palaeo-Eskimo artistic system over a broad geographical range and a time period of several millennia. This preservation allows a unique opportunity to observe the dynamics of artistic change, and less directly the dynamics of change in the belief system in which the art is based.

Description of Palaeo-Eskimo Art

The portion of Palaeo-Eskimo artistic activity which is archaeologically preserved consists primarily of small sculptures carved in ivory, driftwood, antler, bone and occasionally soapstone. The only exception to this statement comprises a number of localities along the southern shore of Hudson Strait where petroglyphs representing human-like faces have been etched into soapstone outcrops (Saladin D'Anglure 1962; Arsenault *et al.* 1998). These petroglyphs, as well as the overwhelming majority of carvings, are associated with the last 2000 years of Palaeo-Eskimo occupation, the period ascribed to the Dorset culture; the art of the Palaeo-Eskimo peoples of Canada and Greenland is therefore commonly referred to as "Dorset art". Close to one thousand such carvings have been recovered from archaeological excavations. The majority of the objects, which we call "art" in Palaeo-Eskimo assemblages, can be interpreted as personal amulets used for hunting and other types of magic, and objects that appear to have been used in shamanic ritual. Most of the sculptures portray humans or animals in a wide variety of realistic and abstract representations. Almost all animals of the Arctic world are depicted, from bears to swans to sculpins. However, the frequency of depiction of a species varies greatly, with humans and bears being portrayed most often.

The relative frequencies with which species are portrayed are far from constant through time and space. There is, for example, a significant increase in the frequency of portrayal of humans, seals, and bears during the "Late Dorset" period, in the centuries between approximately AD 700 and 1300. This is the period which saw a major florescence in artistic activity, and which produced the majority of Palaeo-Eskimo carvings in museum collections. Not all species representations increased however; for example, the relative frequency of walrus depictions declined during Late Dorset times. This may be related to the wide geographic distribution of Late Dorset collections, for this period saw the expansion of Palaeo-Eskimos into many areas where walrus were not a significant economic resource. Economic, environmental, and historical factors, as well as those relating directly to religious thought, appear to have had some influence on regional and temporal variants of Dorset art (Sutherland 1997a).

There is also a wide range of modes in which species have been depicted. Walrus are frequently represented only by sculptures of the head. Caribou are usually limited to the portrayal of an isolated hoof. Representations of bears vary from naturalistic depictions of the entire animal, the head or the skull, to realistic portrayals of an animal in a "flying" posture with incised designs representing the skeleton, to extremely abstracted representations of this "flying" form. These forms of depiction undergo development over time, but not along a single stylistic trajectory. While the "flying bear" figures develop from relatively realistic forms in Early or Middle Dorset times to increasingly abstracted forms during the closing centuries of Dorset existence, they coexist in this Late Dorset period with the most realistic portrayals of bears known from any portion of the Palaeo-Eskimo sequence. Depictions of humans and animals also occur in complex and enigmatic forms: on bell-shaped tubes, for which we cannot determine a function (Figure 5-7); on double-pointed kayak-like carvings in driftwood, and on antler batons covered with relief carvings of up to sixty faces, both human and spirit-like (Figure 5-2).

Shamanic Themes

Three inter-related themes emerge from the corpus of Palaeo-Eskimo art, and suggest parallel relationships with the shamanic belief systems of ethnographically described northern peoples: human/animal transformation; shamanic flight; and the skeleton as an avatar of the soul. A discussion of each of these themes follows.

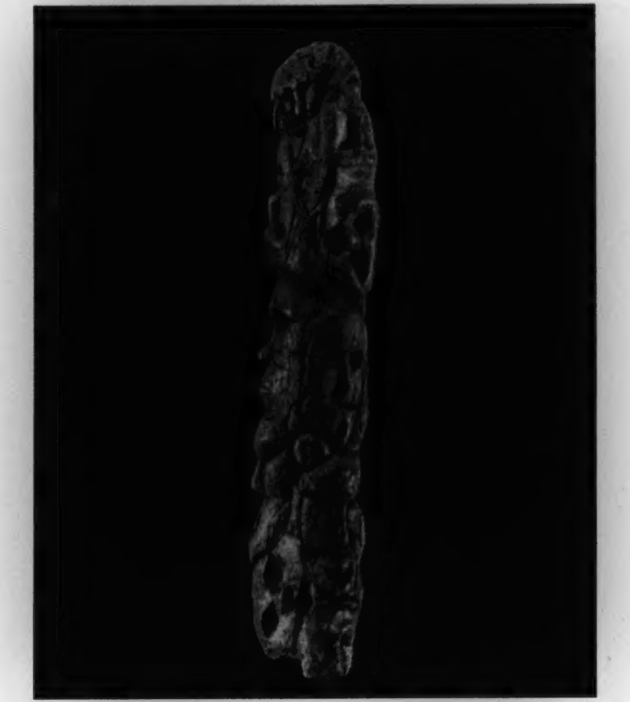

Figure 5-2: Antler baton with faces, *c.* A.D. 1000 (Canadian Museum of Civilization, SiHw-1: 788).

Perhaps the most celebrated Palaeo-Eskimo depiction of the human face is a small ivory maskette from the Tyara site in northern Québec, dating to about 2000 years ago (Taylor 1968). The upper margin of the forehead is concave and rises to a point at either side, giving it an animal-like quality. This image recurs throughout the Dorset cultural sequence, and more specific portrayals of humans with animal-like characteristics occur in the form of occasional depictions of a woman with protrusions from the head resembling the ears of a bear or a wolf (Figure 5-3). The depiction of an actual transformation between human and bear is known from one small ivory sculpture from the High Arctic, in which the head and torso of a bear are seen emerging from the lower body of a human (LeMoine *et al.* 1995). The dramatic representation of human/animal transformation is suggested by finds of carved sets of animal teeth with large canines, designed to be held in the human mouth in order to give the wearer the striking appearance of a bear or wolf (Figure 5-4). Carvings of animals which incorporate the form of a human face may also represent transformation. This is best seen in depictions of birds with the faces of humans peering from the belly or the side of the head, and in the flat abstract representations of "bears in flight" incorporating human faces in cut-out form.

Among northern peoples, a human capacity to transform into an animal is a widespread belief, especially in the case of a shaman taking the form of an animal spirit-helper in order to visit a distant realm of the universe. The transformation from human to bird is particularly common, and is related to the concept of shamanic flight (Balzer

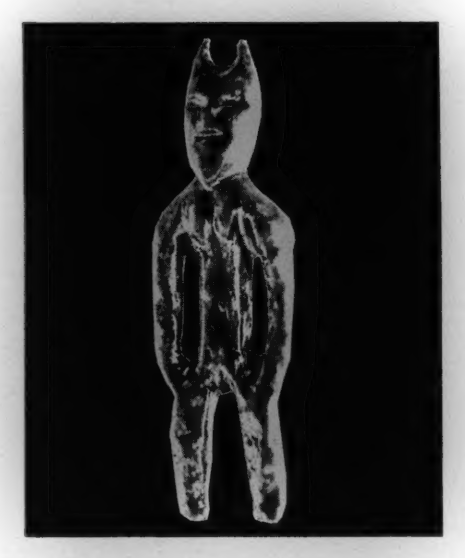

Figure 5-3: Animal/woman figure, carved in ivory, *c.* A.D. 700 (Canadian Museum of Civilization, PgHb-1:9083).

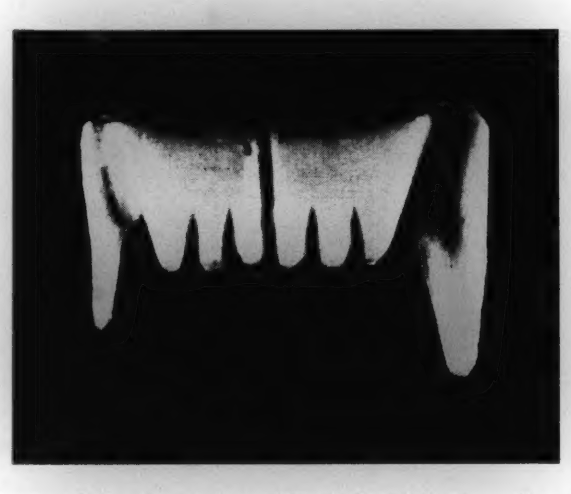

Figure 5-4:. Ivory shaman's teeth, *c.* AD 500-1000 (Canadian Museum of Civilization, NhHd-1:1121).

1996); among many traditional Siberian peoples the shaman's breastpiece and coat take the symbolic form of a bird (Prokofyeva 1963; Serov 1988: 241). The bear is also widely perceived as an important animal in terms of shamanic power, both among northern Asiatic and North American peoples (Pasztory 1982) and is often represented on the attire of shamans (Pavlinskaya 1994). The appearance of evidence in Palaeo-Eskimo art suggesting a belief in transformation from human to bird and human to bear is therefore not surprising. On the other hand, the corpus of art contains no examples suggesting transformation, or the combination of characteristics, involving humans and walrus. This absence is striking in view of the walrus-man imagery which seems to have a long history in the Inuit cultural tradition, and which is represented in carvings, ivory labrets, and clothing design (Fitzhugh and Kaplan 1982: 146; 223; Issenman 1997:101).

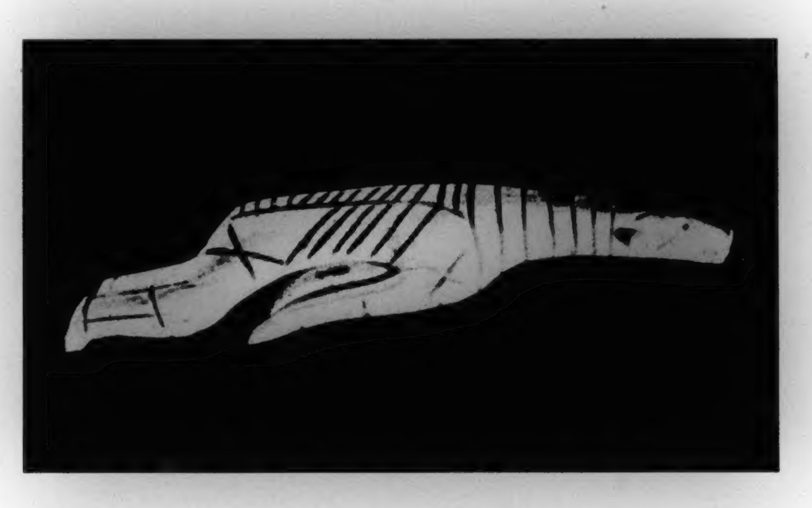

Figure 5-5: Ivory flying bear with skeletal markings, *c.* A.D. 0-500 (Canadian Museum of Civilization, NhHd-1:2655).

In Palaeo-Eskimo art, the theme of shamanic flight is thought to be depicted in some of the transformation sculptures, as well as in other representations. The most notable set of carvings are the various forms of "flying bear" representations discussed earlier. These show, in varying degrees of abstraction, a bear with trailing limbs and the rear feet tilted backwards (Figure 5-5). One common interpretation of this depiction suggests that it represents a bear spirit, either the spirit-helper of a shaman, or the shaman himself in bear form and in the act of flying to another realm. Such an interpretation is supported by the presence of a skeletal pattern that is often incised on the surface of the bear carvings, suggesting that a spirit creature rather than an ordinary animal is being portrayed. A wood carving representing a human which seems to take the same posture as the bear, with arms held close to the body and feet tilted so that the toes point backwards, may also represent a figure in flight. This theme is also suggested in the bear-human transformation figure noted earlier, as well as in a number of other representations of human figures.

The concept of flight appears to have a widespread distribution among northern peoples (Balzer 1996). Its prominence in Inuit belief encouraged scholars to interpret Dorset carvings of bears in this posture as flying bears, or even specifically as the *Tornarssuk* spirit-helper figure of Greenlandic and eastern Inuit belief (Swinton 1967; Taylor 1967). However, an alternative explanation, first proposed by Larsen (1970) but not widely accepted, might be reconsidered: that these carvings represent a hanging bear skin, such as those featured in the bear-cult rituals of Siberian peoples and American Indians of the northern forests. Supporting this interpretation is the fact that some of the Dorset bear figures have a ventral slit or groove, occasionally showing traces of red ochre, which suggest that the animal represented has been eviscerated and that perhaps the skin alone, or skin and symbolic skeleton are portrayed. While the ritual treatment of killed bears was practiced among Inuit groups, it does not appear to be a prominent feature of Inuit culture (Hallowell 1926; Larsen 1970), but may have been more important to their Palaeo-Eskimo predecessors in Arctic North America. Evidence in support of such a suggestion comes from Late Dorset sites on Dundas Island in the High

Arctic, where the skulls and fore-leg bones of several bears were found in the vicinity of the dwellings, and at least one bear skull had been painted with dots of red ochre, suggesting that these bones had been retained for a ritual purpose (McGhee 1975; personal communication 1996). This evidence, and perhaps the interpretation of "flying bear" carvings as depictions of bear skins undergoing ritual treatment, hint at similar practices in the cultures of Siberia and subarctic North America (Hallowell 1926). It may be that both interpretations of the bear figures apply, in that the shaman and his helping spirits are often linked to hunting magic and intercession, and that several distinct layers of meaning may be attributed to specimens such as these.

A third interrelated theme, the spiritual importance of the skeleton in Palaeo-Eskimo belief, has been proposed on the basis of its representation on depictions of "flying bear" figures, as well as on portrayals of humans, seals and other animals (Figure 5-6). Among northern hunting peoples, the view of the skeleton as not simply a remnant of a dead animal, but as a container or representative of the soul or spirit of the creature, is a widely held belief (Pavlinskaya 1994). It has been of particular importance to shamanic practice, with both Siberian and Inuit shamans symbolically reducing themselves to skeletal form in order to attain the abilities of flight and intercession (cf. Rasmussen 1929:114). The incised x-ray motifs of Palaeo-Eskimo art are consistent with such a view of the skeleton, but the specific reasons which led to the carvings of these motifs are more difficult to discern. It is apparent that the artistic representation of the skeleton is extremely stylized, with bones represented as a standardized series of lines and joints by "+" or "x" marks. Such stylization must be the result of a long process of abstraction, during which particular meanings of the markings must have undergone considerable mutation. It is interesting to note that the recently discovered frozen body of the "Ice-Man" from the glaciers on the Austrian-Italian border, bore tattooed "+" marks on the knee and ankle, remarkably similar to those which appear on the joints of Dorset "flying bears" and other carvings (Spindler 1995: 168). This 5000-year-old find suggests that joint-markings must have had a widespread distribution in Eurasia at the time that ancestral Palaeo-Eskimos reached North America, and that the interpretation of such markings may be quite different than the explanations of beliefs concerning the skeleton given by nineteenth or twentieth century informants on northern shamanic traditions.

In addition to sculptures that carry the "x-ray" motif, carvings representing isolated limbs, sections of the vertebral column, and skulls of animals point to the importance of the skeleton in the Palaeo-Eskimo belief system.

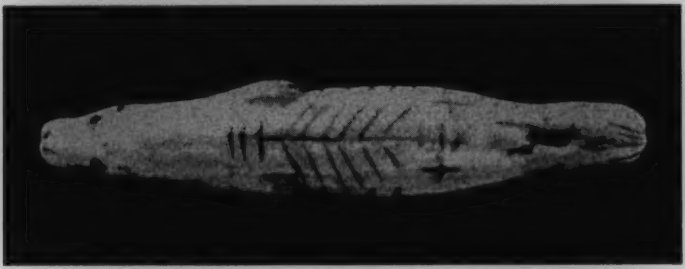

Figure 5-6: Ivory seal with skeletal markings, *c.* A.D. 1000 (Canadian Museum of Civilization, QiLd-1:2215).

Other Imagery in Palaeo-Eskimo Art

Potential insight into Palaeo-Eskimo belief systems is also provided by a class of artifacts which are found in limited numbers in Dorset culture assemblages. These are small flat disks cut from bone, usually from the thin portion of a scapula. They are perforated with a central hole, and marked with radiating lines which often number eight or sixteen. Similar disk-shaped objects are widely distributed among Siberian peoples, where they are commonly associated with the clothing of shamans (Prokofyeva 1963:137). They have been interpreted as representations of a cosmological plane with the central opening or the ice-hole leading to a submarine or subterranean world, and as representations of the sun and moon (Jochelson 1934; Lommel 1967; Martynov 1991). Many of the disks are also divided into multiples of four and may have additional meaning, perhaps associated with the cardinal directions. As with so many other elements of shamanic symbolism, a variety of interpretations suggests either a diversity of beliefs or a multi-layered symbolic system which alluded to several levels of understanding. The recurrence of such a specific form in Palaeo-Eskimo culture strongly suggests that the idea derives from a Siberian connection and that Dorset people may have maintained similar views of the world.

Comparable imagery is known from the ancient cultural traditions of Alaska, occurring in the Old Bering Sea and Ipiutak cultures which existed contemporaneously with Dorset culture in the Eastern Arctic (Chaussonnet 1995: 65; Larsen and Rainey 1948: 138). However, such images occur very rarely in the later Inuit cultures of Alaska, Canada and Greenland. The most striking example, an ivory disk with sixteen divisions, was excavated from an early Inuit archaeological site in High Arctic Canada, a region where Dorset people may have survived and directly contacted their Inuit successors (Sutherland, 1993: 329). The recurring appearance of quartered or eight-sectioned circles in contemporary Inuit art may be fortuitous, or further evidence of the tenuous survival of an ancient Palaeo-Eskimo symbol into a later culture (e.g. Blodgett and Bouchard 1986: 118, 119).

Imagery on other Palaeo-Eskimo artifacts appears to represent complex symbolism, but a symbolism which is not clearly related to that known from any other northern peoples. An example of this occurs on bell-shaped ivory tubes carved from the root ends of walrus tusks. These objects first appear about 2500 years ago as unadorned tubes, but an example from about 2000 years ago has had the edges extended in the form of two bear-heads facing one another across the top of the tube. A few centuries later the bears were replaced by walrus with their bodies extending up the outer edges of the artifacts and their tusks interlocking across the top. A pair of human faces have now been added to the opposite sides of the tube, and on one Late Dorset example a bear and a seal are portrayed on opposite sides above the faces (Figure 5-7). In another Late Dorset

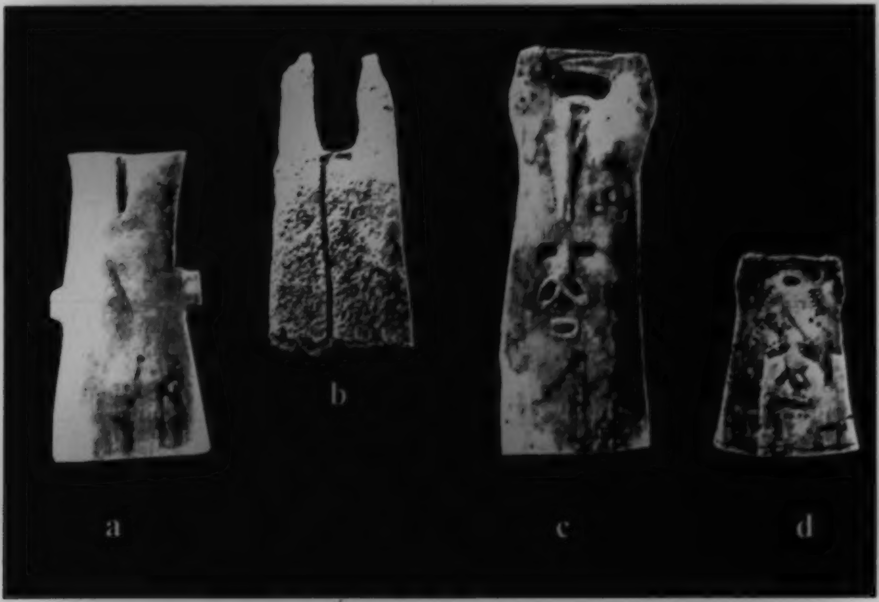

Figure 5-7: Four bell-shaped tubes, carved in ivory. From left to right: (a) 500-1 B.C.; (b) *c.* A.D. 0; (c) *c.* A.D. 1000; (d) *c.* A.D. 1000 (Canadian Museum of Civilization, QiLd-1:12; KkHh-3:914; NiHf-4:115; SiHw-1:453).

example, a seal-human transformation figure is added. LeMoine *et al.* (1995) have suggested that the depiction on these tubes of humans, walrus, and occasionally bear and seal may relate to a specific complex mythological narrative. If that is the case, then this narrative may have been unique to the Palaeo-Eskimo tradition and may have changed considerably over two millennia before disappearing with the last of the Palaeo-Eskimos. It should not be surprising that a people as isolated as the Palaeo-Eskimos would have developed a distinctive mythological tradition, portions of which may not relate to the myths and beliefs of other northern peoples.

Conclusions

When William Taylor and George Swinton examined the shamanic associations of Palaeo-Eskimo art, they dealt with the art as a unitary phenomenon which was interpreted as sharing in a widespread and uniform shamanic belief system common to northern peoples, and which shared specific attributes with the belief system of the Inuit people. Since the time of their study, the corpus of known Palaeo-Eskimo art has grown significantly and now comprises material from a broader geographical and temporal range. In examining the material currently available in museum collections, the most immediate impression is of diversity (Lyons 1982; Sutherland 1997b). The art of the Palaeo-Eskimos was obviously not static, but very dynamic, changing over time in many different directions and probably in reaction to many different stimuli. Changes are apparent in the overall rate of artistic production, in the relative frequency with which specific subjects or symbols are portrayed, in the degree of abstraction or complexity of symbolic combinations, and in the forms of symbols themselves. The best example is in the portrayal of bears, but changes of various kinds are also very apparent in the portrayal of humans. For example in the enduring tradition of carving small ivory maskettes, the form changes from the earliest known example, a serene tattooed face from 3900 to 3600 years ago (Helmer 1986), to a vaguely animal-like face of 2000 years ago, to the grotesque faces found on maskettes carved about 1000 years ago.

It is tempting to suggest that changes in the art of the Palaeo-Eskimos reflect a similar set of changes which occurred in the symbolic system and the belief system with which the art was clearly associated. Rather than seeing a "shamanic belief system" as the product of an ancient and continuous cultural pattern, possibly rooted in the beliefs of Palaeolithic hunters, we should perhaps interpret the evidence for diversity and change in Palaeo-Eskimo art as evidence that shamanic beliefs have also been mutable in the cultural traditions of the past several thousand years.

An acceptance of this view implies that interpretations of Palaeo-Eskimo art based on direct comparisons with the belief systems of nineteenth and twentieth century peoples have been somewhat naive. Rather than viewing evidence for similarities between Palaeo-Eskimo and Inuit cosmological or religious beliefs as indicative of a "common symbolic reservoir," as has been suggested by LeMoine *et al.* (1995), we might more aptly visualize parallel symbolic streams flowing from an ancient past and contributing in unique ways to the reservoir of beliefs among the northern peoples of recent centuries. From this viewpoint, Dorset art is a uniquely preserved cultural stream which can provide information on the reservoir's formation.

Also viewed from this perspective, we should not be surprised at apparent disjunctions between the symbolic system of the Palaeo-Eskimos and those of recent

Inuit culture. If the Palaeo-Eskimos originally derived from Siberia about 5000 years ago, at a time when ancestral Inuit were occupying southern Alaska, then one might expect the Palaeo-Eskimo religious and symbolic systems to hold more in common with the descendants of similar 5000 year old Siberian cultures. This may in fact be seen in evidence from Dorset art, which hints at the importance of human/bird transformation, complex ritual associated with bears, and the perforated disk as a symbol of cosmological order.

But Palaeo-Eskimo art cannot be seen as a simple transfer of Siberian beliefs and symbols to North America. Rather, it should be interpreted as a palimpsest of layered beliefs: some originating in the Siberian shamanism of 5000 years ago, which must have been considerably different than the shamanism of the past century; some perhaps adopted through contact with American Indian peoples living in adjacent forested areas; some modified through contacts with the evolving Eskimo cultural traditions of Alaska. Just as scholars have suggested that Christian missionary influence has modified aspects of the mythology and belief systems of northern peoples in recent times (Sonne 1986), contact and influences in the past must have also produced significant changes.

The most interesting aspect of Palaeo-Eskimo art may not be in specific interpretations of the iconography, but in the insight which it provides into the malleable and dynamic nature of the symbolic and belief systems of a hunting society.

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Chapter 6: Variability and Change in Palaeo-Eskimo Architecture: A View from the Canadian High Arctic

Introduction

High Arctic Canada, comprising the Queen Elizabeth Islands to the north of Parry Channel, was occupied by Palaeo-Eskimos for approximately 4000 years. Archaeological research on the Palaeo-Eskimo occupation of the High Arctic began barely fifty years ago, and has been limited to a few regional surveys and excavations concentrated in isolated local areas (Figure 6-1). In attempting to synthesize the evidence currently available, one must be cognizant of these circumstances, and aware of the inadequacy of our knowledge in defining either the complete range of the phenomena investigated or major patterns within that range.

Given this situation, prudence suggests an approach that defines more limited objectives than the presentation of a synthesis of Palaeo-Eskimo architecture in the region. As a background to this discussion, the following paper summarizes current views on the temporal/cultural divisions of the Palaeo-Eskimo tradition in the High Arctic, and briefly argues the extent to which these divisions represent a cultural continuum. It then notes some important environmental considerations in relation to the construction of dwellings, as well as some of the salient features of Palaeo-Eskimo architecture in the High Arctic. The enormous range of variability in architectural features reported from the region is discussed in terms of the multiplicity of factors that impinge on decisions resulting in the creation of a unique structure. Three architectural features which may have underlying symbolic meaning are isolated as recurring forms within this variability. A comparison of the distribution of these features across space and time leads to some observations concerning cultural connections between regional and temporal divisions of the Palaeo-Eskimo sequence, and on the nature of the societies that are represented by these architectural remains.

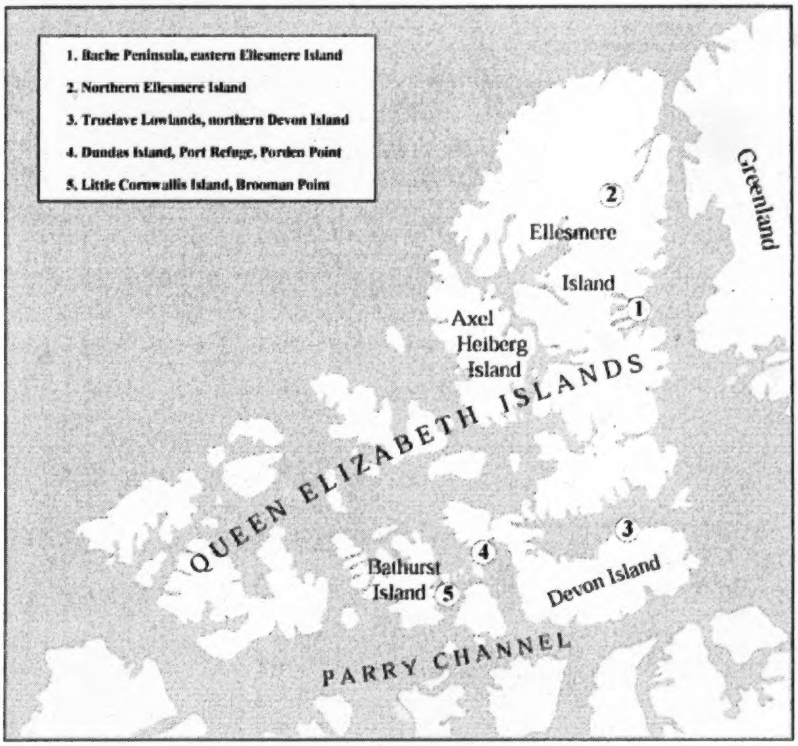
1. Bache Peninsula, eastern Ellesmere Island
2. Northern Ellesmere Island
3. Truelove Lowlands, northern Devon Island
4. Dundas Island, Port Refuge, Porden Point
5. Little Cornwallis Island, Brooman Point
Greenland
2
Ellesmere
Island
1
Axel
Heiberg
Island
QUEEN ELIZABETH ISLANDS
3
4
Bathurst
Island
5
Devon Island
PARRY CHANNEL

Figure 6-1: Map of High Arctic Canada, showing areas of concentrated archaeological research.

Temporal and Cultural Divisions of the High Arctic Palaeo-Eskimo Tradition

High Arctic Canada lies geographically between three regions that attracted earlier archaeological investigations: the Canadian Low Arctic, western Greenland, and High Arctic Greenland. By the mid-twentieth century, the Palaeo-Eskimo occupations of these regions had been partitioned into a series of named cultural units separated on a temporal basis. When archaeological investigations of High Arctic Canada began, Palaeo-Eskimo sites were assigned to the cultural units that had been already defined in adjacent regions. The Palaeo-Eskimo component discovered by Collins (1952) in association with Thule villages on Cornwallis Island was identified with Dorset culture. Lowther (1962) assigned an early Palaeo-Eskimo occupation on Devon Island to the Pre-Dorset culture defined in more southerly Arctic regions. Knuth (1965) considered the components that he discovered on northern Ellesmere Island to be related to the Independence I and II cultures previously defined in the Pearyland area of northern Greenland. McGhee (1976) related occupations of northwestern Devon Island to Independence, Pre-Dorset and Late Dorset variants of the Palaeo-Eskimo tradition. Finally, Schledermann (1990) added the Saqqaq complex, first defined in western Greenland, and an Early Dorset complex related to that of Low Arctic Canada, to the inventory of temporal/cultural variants of the Palaeo-Eskimo tradition present in High Arctic Canada.

Earlier views were based on an assumption that most or all of these named cultural units reflected an occupation pulse emanating from more southerly regions, followed by local adaptation to the marginal conditions of the High Arctic and eventually by the disappearance of local populations (McGhee 1976). This core-pulsation hypothesis has been replaced in recent years by an emphasis on population continuity in certain outlying areas, supplemented by diffusion of cultural elements between regions (Bielawski 1988; Schledermann 1990; Helmer 1991; Sutherland 1996). The arguments for continuity are relevant to the earlier cultural units in the tradition—those ascribed to the Independence, Saqqaq, Pre-Dorset and early Dorset complexes—although there is no general agreement regarding the exact nature of the relationship between these occupations. Helmer (1994: 23) has noted the conceptual inadequacy of this mixture of named "stages", "phases", "complexes", "or "episodes" for clarifying our understanding of Palaeo-Eskimo prehistory, but no more rational system has emerged from subsequent discussions of the problem. Whatever the complexities of early Palaeo-Eskimo occupation of the High Arctic, researchers agree that to date there is little evidence for the area having been inhabited over the millennium between approximately 2500 and 1500 years ago, and that the subsequent Late Dorset complex can best be viewed as a movement of population from the Low Arctic into what had been an unoccupied area, and the subsequent development of a widespread presence in the region.

The Nature of Palaeo-Eskimo Architecture in the High Arctic

Most of the archaeological remains of Palaeo-Eskimo structures in High Arctic Canada are so minimal that it can be a difficult task to interpret even such basic aspects as the above-ground form of dwellings. In examining Palaeo-Eskimo architecture in this particular region of the Arctic, we may best begin by noting the environmental constraints related to shelter requirements and the availability of suitable building materials, as well as characterizing the general nature of the archaeological remains that represent Palaeo-Eskimo architecture.

High Arctic summers are cool and relatively dry, with continuous daylight over a period of several months; protection from wind and occasional light rain requires no more than minimal shelter, such as that afforded by a light skin-walled tent. In winter the High Arctic is the only area of Arctic Canada that experiences true polar night, when twilight is absent for a period ranging from a few weeks in the south to a few months in the northern portions of the region. Approximately eight months of the year are characterized by extreme cold, with frequent winds and blowing snow, requiring insulated shelters capable of retaining heat produced by the warmth of human bodies or small flames. There is little evidence for the use of oil lamps through at least the earlier portions of the sequence, and the scarcity of other fuel sources (driftwood, willow, heather, animal bones and fat, possibly herbivore dung) emphasizes the importance of insulated shelter.

The distance from forested lands, and the relative scarcity of driftwood in the High Arctic, placed major limitations on dwelling construction. It is assumed that the walls and roofs of most structures were supported by thin driftwood poles and rails split from driftwood logs. These materials are capable of supporting skin tent coverings, but not heavier roofs constructed of turf or stone. The remnants of whale bone roof supports, together with the remains of cut turf from a tumbled wall, have been reported from only a single Late Dorset dwelling on Little Cornwallis Island (Helmer 1996: 305; LeMoine *et al*, this volume). Turf, boulders, and gravel appear to have been only occasionally used in the construction of substantial walls, even for dwellings that were occupied during the winter season. This implies that snow was a major construction material used for the insulation of dwellings, either in the form of snow blocks or loose snow banked against skin tents. The absence of clearly identifiable snowknives or probes, like the specialized tools used by Inuit for snow-block construction, suggests that loose snow was the primary building material for winter insulation.

Large and complex habitation structures associated with thick layers of cultural material would appear to occur rarely in the High Arctic, although they are common in more southerly regions and are reported from as far north as northern Baffin Island (Mary-Rousselière 1976, 2002). Short-term use on the scale of a few days or weeks seems to have been the prevalent pattern in this region for all types of dwelling structures. Stone caches are occasionally found in association with Palaeo-Eskimo occupations, but these structures are significantly smaller and fewer in number than those associated with Thule Inuit sites in most Arctic regions. The paucity of food caches may be related to the lack of evidence for long-term occupation of individual Palaeo-Eskimo dwellings or dwelling sites.

Variability in Palaeo-Eskimo Architecture

The polar desert environment which characterizes High Arctic Canada produces, in most areas, minimal erosion or accumulation; such conditions are conducive to the preservation of small-scale architectural features. The absence of significant vegetation cover over most of the region allows unequaled visual access to such traces of past activity. In addition, the generally sparse occupation of most High Arctic areas permits the discrimination of individual habitation components to a degree that is impossible in most other regions, where occupation sites are usually a palimpsest of numerous temporally discrete occupations. These advantages should provide archaeologists with optimal conditions for defining and understanding the architectural aspects of the Palaeo-Eskimo cultural tradition.

Perhaps as a consequence of this situation, archaeologists quickly assigned cultural significance to the architectural features associated with various cultural complexes. Knuth (1966,1967) ascribed important normative value to the forms of axial features which he found on Independence I and II sites in northern Greenland. Following Knuth's lead, McGhee (1976) attached similar significance to the presence or absence of axial features in assigning the various Palaeo-Eskimo components at Port Refuge to the

Independence or Pre-Dorset complexes. More recent work, based on extensive survey information, has emphasized the high degree of architectural variability associated with such complexes, and consequently decreases the value of the normative ascriptions assigned by earlier researchers (Sutherland 1988, 1989, 1996).

It is apparent that numerous factors impinge on the construction decisions that resulted in the creation of dwellings. A list of such factors would include the function of the structure (dwelling, workshelter, cache, ceremonial site); the size of the social unit to be sheltered; the season of use and associated shelter requirements; the planned duration of occupation and consequently the degree of effort invested; the availability of stone slabs, boulders, turf and gravel in the local environment; the availability of construction-quality snow; the size and number of roof supports available; the size of tent cover available; and the local ground conditions. It may be argued that these factors, taken in combination, account for a great deal of the variability reported in the archaeological remains of Palaeo-Eskimo structures. Traits such as the size, outline shape, depth of excavation, presence or absence of elements marking the outline of the feature, may have been heavily influenced by local and transitory factors affecting the decisions of the builders. These attributes may therefore be of limited use in defining the architectural repertoire of the various temporal/cultural complexes of the Palaeo-Eskimo sequence, and of detecting the nature of relationships between these complexes.

In order to more adequately characterize the Palaeo-Eskimo architectural tradition, and to derive meaningful cultural information from the great range of variability apparent in this tradition, it may be worth eliminating consideration of much of the variability, and to constrain discussion to a few architectural forms that seem to relate principally to culturally prescribed ideas or ideals. Three features are identified and discussed in the following section.

Central Features in Palaeo-Eskimo Architecture

Certain features of Palaeo-Eskimo architecture—the box-hearth, the midpassage, and the longhouse with associated hearth-rows—recur through much of the temporal sequence of occupation, or are widely distributed on a geographical horizon. These features can be viewed from two perspectives, each of which may shed some light on the place of certain architectural elements in the culture of the Palaeo-Eskimos. From the first perspective, they can be seen as utilitarian structures fulfilling a functional purpose in providing shelter, heat, light, cooking facilities, and a tangible means of separating space within a dwelling or encompassing a social unit. Simultaneously, from a second perspective, they may be seen as metaphors which held symbolic meaning related to the worldview shared by Palaeo-Eskimo communities (Plumet 1989; Damkjar 2000; Odgaard 2001; Park, this volume). Studies of Dorset art have explored the degree to which the symbolic system of the Palaeo-Eskimos is reflected in their material culture (Taylor and Swinton 1967; LeMoine *et al* 1995; Sutherland 2001), and we might expect this phenomenon to extend to architecture as well as artistic production. If this assumption is correct, and these architectural features functioned as symbolic metaphors as well as utilitarian structures, the distribution and changes in the form of these features may be attributed with greater reliability to cultural decisions than can changes in most other characteristics of Palaeo-Eskimo structures. It follows that, as architectural elements which appear to have an enduring presence in Palaeo-Eskimo culture, the patterns of occurrence and variability demonstrated by these features may reflect the social processes and historical events that shaped the development of the Palaeo-Eskimo cultural tradition in the High Arctic and elsewhere.

Box-Hearth: Square hearths built from stone slabs or cobbles are associated with the early Palaeo-Eskimo components that are usually ascribed to the Independence I complex, and dated to the centuries around 4500 to 3700 BP throughout the High Arctic (Figure 6-2). They occur as isolated features, as interior or central features of amorphous habitation structures, and as part of midpassage axial features (McGhee 1979; Sutherland 1988, 1989; Schledermann 1990; Helmer 1991). From eastern Ellesmere Island Schledermann (1990: 51) reports box-hearths filled with fist-sized boiling stones, similar to those described by Knuth (1967) from Pearyland Independence I sites, suggesting that at least some hearths were used to heat stones used for cooking food in skin containers.

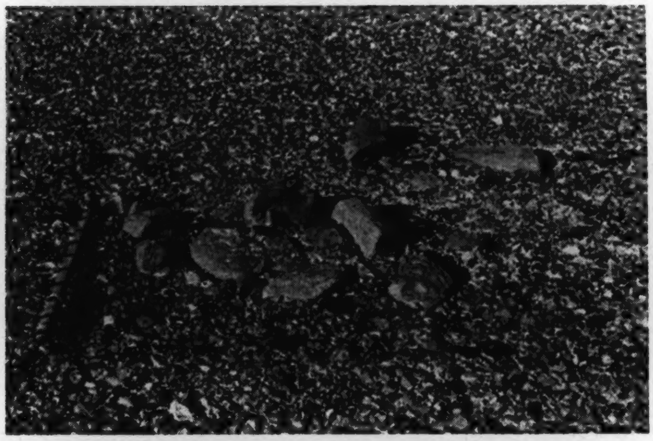

Figure 6-2: Isolated hearth feature (Independence I), Lake Hazen, Northern Ellesmere Island (photo: P. Sutherland).

Both isolated box-hearths and hearths central to midpassage features are reported from subsequent Ellesmere Island components that Schledermann (1990: 84-5) identifies with the Saqqaq complex, and a box-hearth feature occurs on at least one site on northern Devon Island dated to the period of approximately 3700-3500 BP (Helmer 1991: 309). However, elsewhere across the High Arctic, this feature is not reported in association with Palaeo-Eskimo components ascribed to the later Pre-Dorset complex and dating to the period between approximately 3700 and 2800 BP. At one site assigned to this period, Schledermann (1990: 119) reports a different type of hearth, formed by a horizontal slab flanked by upright stones which are notched at the top to support a soapstone vessel. Elsewhere the hearths associated with this period are evidenced by amorphous concentrations of boulders, or scatters of charcoal and charred fat. The absence of box-hearths may be related to the use of oil-lamps to provide heat and winter light, and a consequent change in cooking techniques.

Square box-hearths reappear throughout the High Arctic in association with the complex variously ascribed to Independence II (McGhee 1979; Sutherland 1988, 1989; Helmer 1991) or Transitional complexes (Schledermann 1990), and dated to the centuries around 2800 to 2500 BP. Here they most commonly comprise the central element of midpassage axial features, and these are often larger and more carefully built from thin stone slabs than were the axial features of the period about a millennium before (McGhee 1979; Sutherland 1988, 1989; Schledermann 1990; Helmer 1991). Boxes constructed from stone slabs for purposes other than hearths also appear at this time. From eastern Ellesmere Island Schledermann (1990: 166) reports an isolated box of slabs closed with slabs and cobbles, which was perhaps a cache or a structure having some sort of ceremonial use; a similar box-cache is reported from another site in the area, attributed to the slightly more recent Early Dorset complex (Schledermann 1990: 186). At Porden Point on Devon Island, a square box of slabs which was probably used as a cache was constructed to the side of a midpassage in an Independence II dwelling (Figure 6-3) (McGhee 1981: 20).

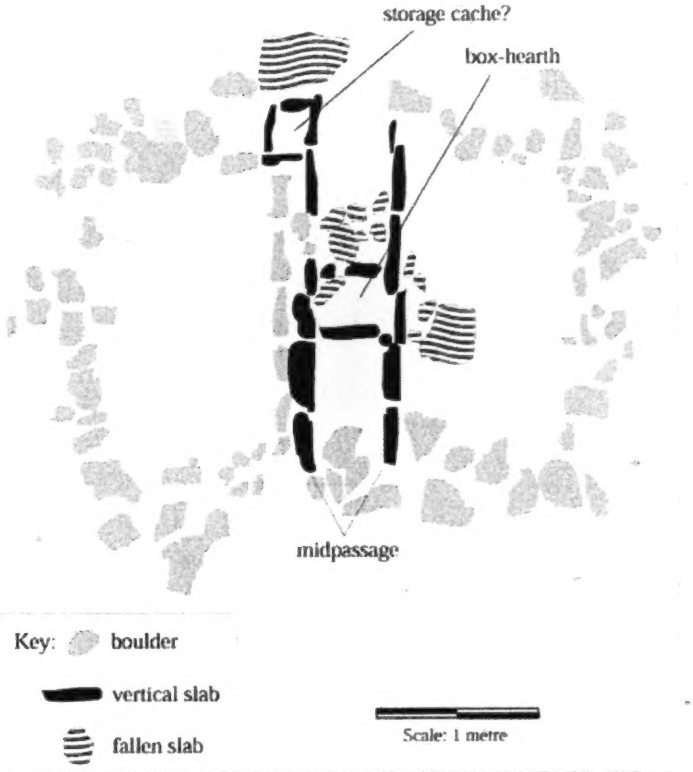
storage cache?
box-hearth
midpassage
Key:
boulder
vertical slab
fallen slab
Scale: 1 metre

Figure 6-3: Plan of an Independence II dwelling at Porden Point, Devon Island (after McGhee, 1981).

After a period of apparent abandonment, the Late Dorset re-occupation of the High Arctic was associated with the use of hearths designed for cooking in soapstone vessels: these take the form of horizontal stone slabs flanked by vertically placed supports for pots (Figure 6-4). External box-hearths associated with Late Dorset dwellings have been reported on Little Cornwallis Island (Helmer 1996: 303). An

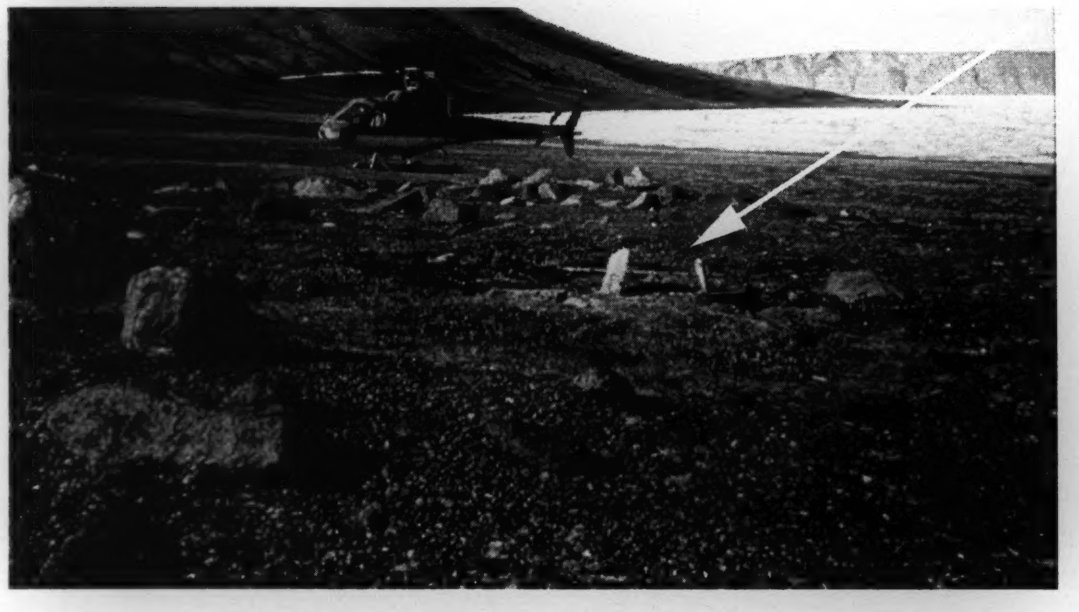

Figure 6-4: Lamp supports as part of a hearth feature in a Late Dorset dwelling that is obscured by soil and vegetation, Eureka Sound, Ellesmere Island (photo: P. Sutherland).

external box-hearth found near a Late Dorset dwelling on Axel Heiberg Island (Sutherland 1993) was associated with a concentration of red ochre and a spatulate carving, suggesting a possible ritual function. Stone boxes which appear to have been used as small caches rather than hearths are reported from the Late Dorset component at Brooman Point on Bathurst Island (McGhee 1984, personal communication). The most common occurrence of box-hearths is in external hearth-rows associated with longhouse structures, the individual hearths often built from cobbles rather than slabs and associated with slab pavements (Schledermann 1990: 224-30).

Midpassage: An axial feature dividing the dwelling into roughly two equal halves appears to have been a common element of Palaeo-Eskimo architecture. This floorplan has counterparts widely distributed across northern Eurasia and appears to have significant time depth in the cultures of that region (Knuth 1966). The symbolic associations of the axial feature among more recent peoples have been discussed by Plumet (1989) and Odgaard (2001), who propose that similar associations must have characterized the way in which Palaeo-Eskimos related to their dwellings.

For the purpose of this paper, a distinction is made between the "midpassage" axial element carefully constructed from two parallel lines of rocks; the "axial feature" evidenced by more amorphous arrangements of rocks and the remains of hearths; and dwellings which lack axial features.

The temporal distribution of midpassage features in the High Arctic roughly parallels that of box-hearths, and the two are commonly associated. A significant proportion of habitation structures on sites ascribed to the Independence I complex on Ellesmere, Axel Heiberg and Devon islands have midpassages created by lines of vertically-placed slabs or cobbles (Figure 6-5) (McGhee 1979; Sutherland 1988, 1989; Schledermann 1990; Helmer 1991). Midpassages continue in the Saqqaq-related components of eastern Ellesmere Island defined by Schledermann (1990: 84-5), but are rarely reported from other High Arctic components dating from the period between approximately 3700 and 2800 BP. Some of these sites, which are seen as related to the Pre-Dorset complex of Low Arctic regions, have amorphous axial features composed of boulders (Schledermann 1990: 119; Helmer 1991: 308), but even this type of feature is absent from the dwellings reported from other areas (McGhee 1979: 90-2).

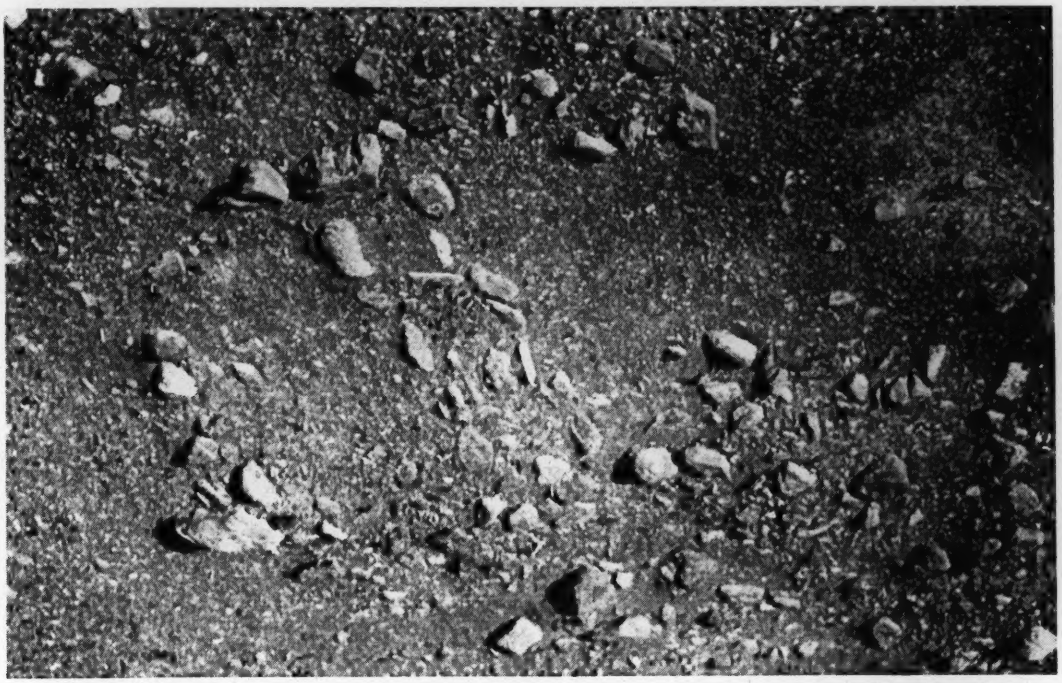

Figure 6-5: Aerial view of an Independence I dwelling with midpassage and central box hearth, Lake Hazen, Northern Ellesmere Island (photo: P. Sutherland).

Midpassages reappear across the High Arctic in the centuries between 2800 to 2500 BP, in association with components ascribed to Independence II or Transitional complexes (Figure 6-6). In most regions, at least a few of these features are built from large thin slabs, some of which appear to have been carefully selected and trimmed (Figure 6-7) (McGhee 1981; Sutherland 1988, 1989; Schledermann 1990; Helmer 1991),

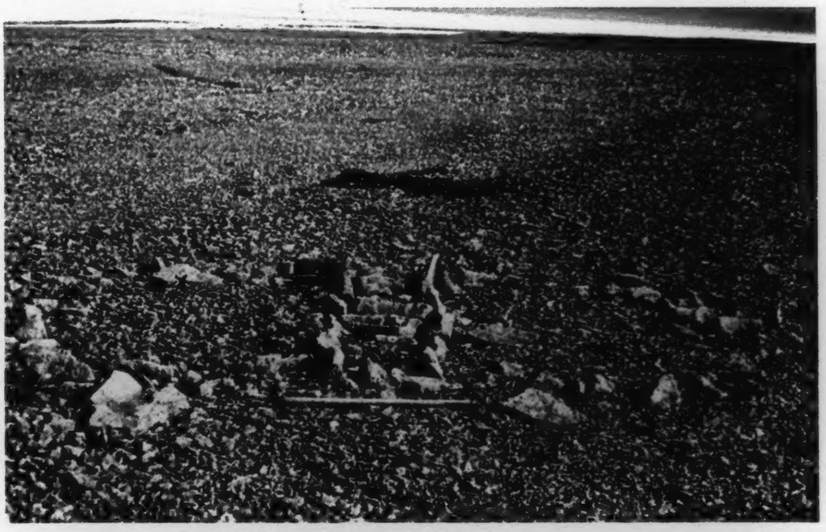

Figure 6-6: Independence II dwelling at Porden Point, Devon Island (photo: R. McGhee).

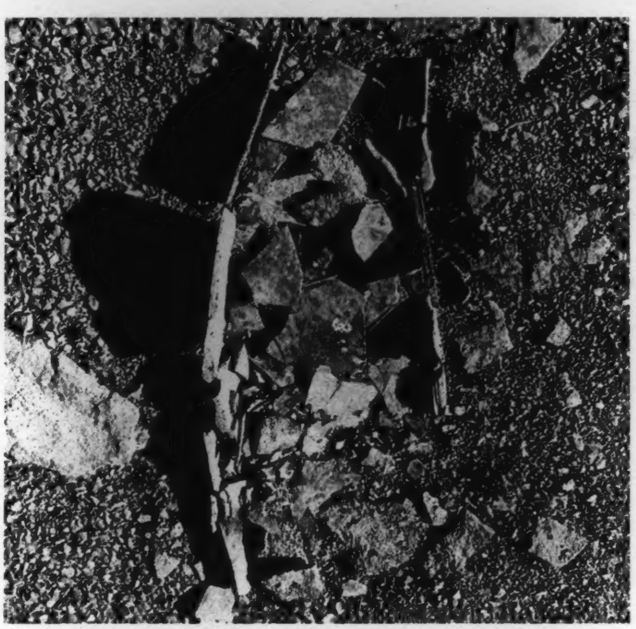

Figure 6-7: Independence II midpassage at Port Refuge, Devon Island (photo: P. Sutherland).

although the majority of structures associated with these complexes are less distinct. True midpassages are not reported from subsequent Early Dorset sites (Helmer 1980, Schledermann 1990). One such site on eastern Ellesmere Island comprised an ill-defined line of hearths with adjacent caches and pavedareas, a feature reminiscent of the hearth-rows associated with later structures (Schledermann 1990: 189).

The Late Dorset re-occupation of the High Arctic brought a new form of midpassage to the region (McGhee 1981; Schledermann 1990: 331; Helmer 1991: 313; Sutherland 1993; Helmer 1996; LeMoine *et al*, this volume). This form of structure is best preserved at the Snowdrift site on Dundas Island (McGhee 1981), but these features appear to be typical of examples reported from other areas. Late Dorset midpassages at the Snowdrift site are between two and four metres in length and generally wider than those of earlier periods, averaging approximately one metre in width; they are paved with flat slabs, and bordered by lines of elongate boulders rising a few centimetres above the passage floor. The passages contain either a central hearth or two hearths placed equidistantly from the ends of the feature; hearths are constructed from a horizontal slab, characteristically covered with charcoal and burnt oil, flanked by vertically placed boulders with the tops squared or slightly notched to support a cooking pot (Figure 6-8). On either side of these midpassages are living or sleeping areas approximately one metre wide, cleared of rocks and covered by a layer of moss and wood shavings, probably the preserved remnants of bedding material. The entire structures are subrectangular in outline, with no indications of wall structures or weights for a tent cover.

In contrast to the midpassage with little evidence of wall structure, another dwelling type that is characteristic of the period is the subrectangular house excavated a few centimetres beneath the surface, surrounded by a low berm of gravel and other material, and usually lacking any evidence of an axial feature or other internal structure (Figure 6-9). From eastern Ellesmere Schledermann (1990 reports two semisubterranean

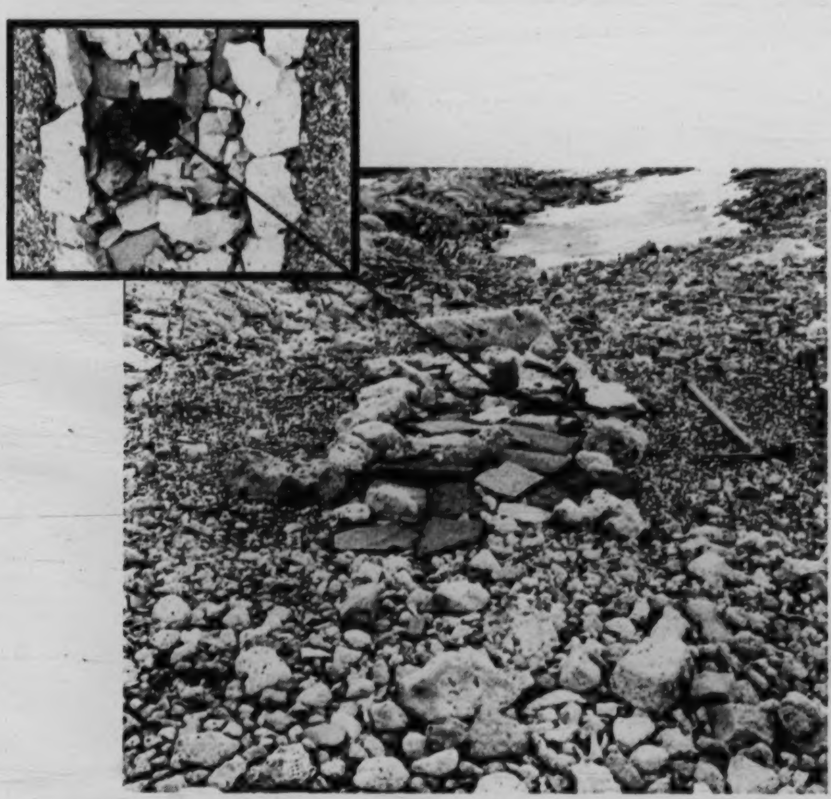

Figure 6-8: Late Dorset midpassage dwelling at the Snowdrift site, Dundas Island; insert: vertical view of hearth with pot rests, charcoal and charred fat (photo: R. McGhee).

dwellings of this type, but with midpassages, and another example is reported from Axel Heiberg Island (Sutherland 1993) (Figure 6-10).

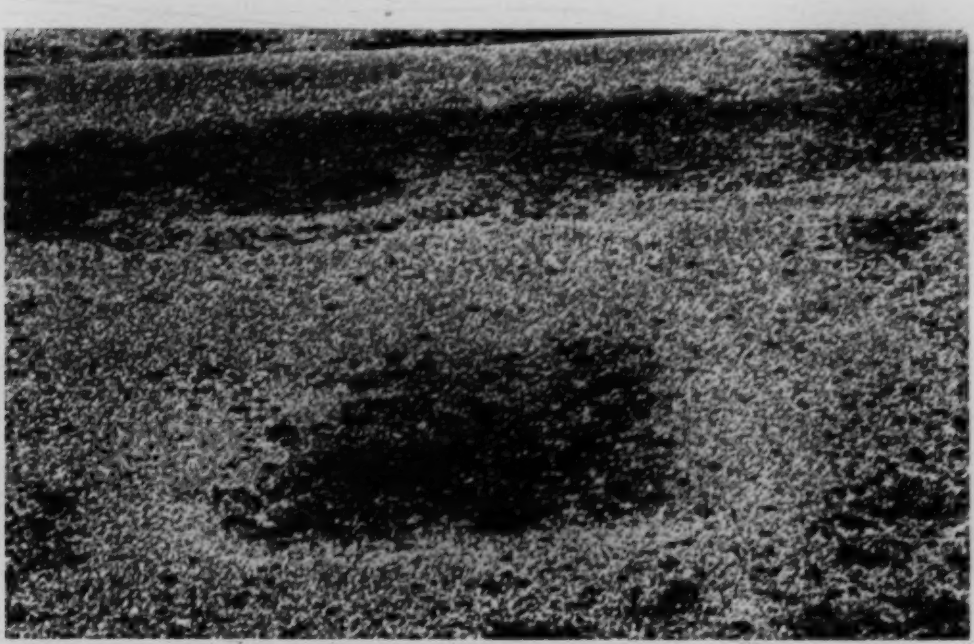

Figure 6-9: Late Dorset semi-subterranean dwelling at Fellfoot Point, southern Devon Island (photo: P. Sutherland).

Several of the Late Dorset dwellings on Little Cornwallis Island described by LeMoine *et al* (this volume) combine a midpassage with a semisubterranean structure, including a unique house referred to earlier that appears to have had turf walls and roof supported by whale bones. The distribution of structures such as this, with both a well-defined midpassage and relatively heavy wall construction, is not known. However it has been estimated, on the basis of extrapolation from extensive survey, that less than

1% of the dwelling sites related to the Late Dorset occupation of the High Arctic have been investigated in even a preliminary manner (Sutherland 2000:164), so our current knowledge is anything but comprehensive.

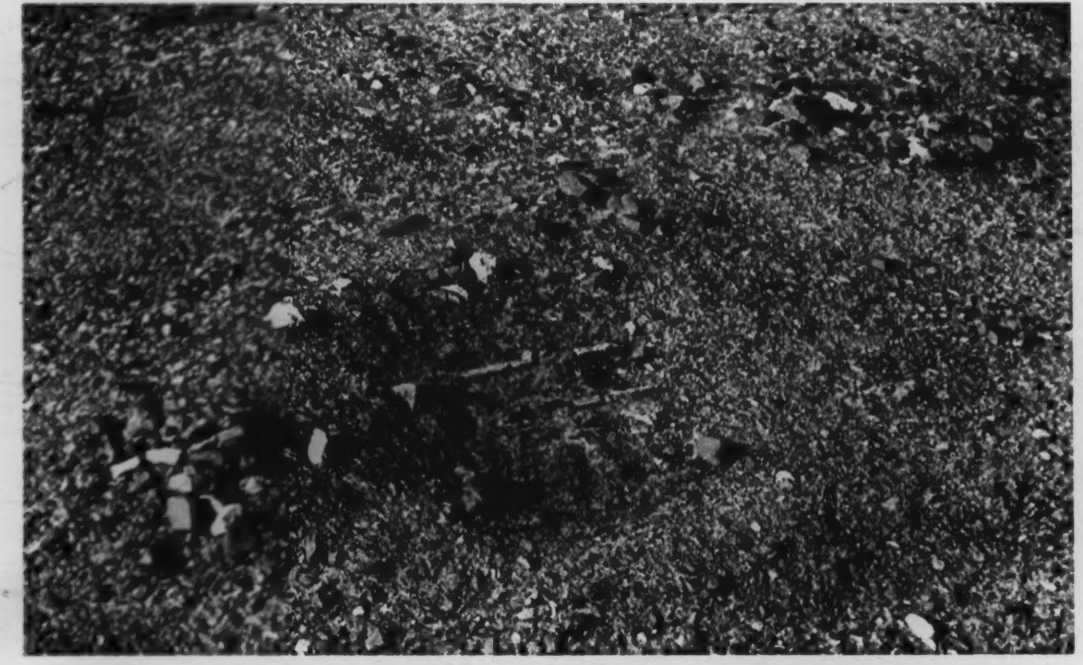

Figure 6-10: Aerial view of a Late Dorset semi-subterranean dwelling with midpassage at the Tingmiark site. Gibbs Fiord, Axel Heiberg Island (photo: P. Sutherland).

Longhouse: The third architectural feature, one which appears to have been conditioned primarily by social requirements and culturally prescribed ideas, is the large communal structure known from across the Arctic during Late Dorset times. Longhouses are only loosely associated with the dwellings that are characteristic of the period, and seem to have been constructed for short-term seasonal use by people who dwelt for most of the year in tents and small semisubterranean houses. Damkjar (2000) has provided an excellent summary of the distribution and attributes of longhouse structures, together with a review of discussions regarding their use and the relationships proposed to exist between structure and social function. Thirteen longhouses are known from the Canadian High Arctic (Helmer 1981, 1991, 1996; McGhee 1984; Schledermann 1990, 1996; Park, this volume), together with three in the adjacent region of northwestern Greenland (Appelt *et al* 1996; Gulløv and Appelt 2001). This number is comparable with those from more southerly regions of Arctic Canada, and the size and concentration of structures in the Bache Peninsula region of Ellesmere Island (Schledermann 1990) is as impressive as that from any other Arctic locality. Longhouse structures are surprisingly difficult to detect in aerial surveys, or even in walking surveys in certain landscapes, and we should assume that the known features represent only a small sample of the number that may actually exist. The broad geographical distribution of longhouse structures, together with their uniformity and constrained temporal range, can be contrasted with the distributional characteristics and structural diversity of the other two central features of Palaeo-Eskimo architecture—the box-hearth and midpassage—described above.

The Box-Hearth/Midpassage/Longhouse Complex

In the previous section of this paper, the distribution and range of forms relating to three architectural features typical of High Arctic Palaeo-Eskimo occupations: box-hearth, midpassage, and longhouse were noted. It is apparent that these features are closely associated in actual construction, and perhaps in the symbolic system of the Palaeo-Eskimo. Box-hearths are the central elements of midpassages, and comprise the individual elements of the hearth-rows that are associated with longhouses. Plumet (1989: 322), as well as Gulløv and Appelt (2001), suggest that longhouses developed from axial or hearth-row structures, linking all three features into an architectural complex that spans the entire Palaeo-Eskimo continuum.

On a higher level of comparison, Knuth (1966) first noted the similarity of Independence midpassage structures to the traditional dwellings of the Saami. The resemblance of axial structures to northern Eurasiatic dwellings has been considered by several researchers as evidence in support of a Siberian origin of the Palaeo-Eskimo tradition, and also as an indication that Palaeo-Eskimo structures were imbued with symbolic meanings similar to those with which northern Eurasiatic peoples invested their habitations. In a recent summary of knowledge relating to the traditional Saami dwelling, Yates (1989: 251) notes that "The divisions of the Saami *kåhte* articulated the system of values and authority upon which Saami society was based." Relationships of gender, age, and standing in the society, were formalized in the positions assigned to individuals in the various divisions of the structure, and in the rules and privileges relating to the activities permitted to them. At another level, the axial feature and central hearth symbolically represented a series of linked oppositions that structured the traditional worldview: the hearth was identified with the sun, dividing the sacred world to the rear of the dwelling (associated with males, hunting and death) from the secular (female, life, domestic) area at the front of the dwelling (Yates 1989: 254-7).

Other systems of symbolic attributes have been suggested as possible interpretations of the axial configuration of Palaeo-Eskimo dwellings. Odgaard (2001:30) interprets axial features in terms of the Siberian shamanistic concept of the clan-river, symbolically representing the three worlds that intersect at the hearth. Plumet (1989: 323-4) presents a more intriguing interpretation, relating the axial feature and the resulting bilateral symmetry of dwellings to the axial elements that are central to skeletal representations of bears and seals in the miniature sculptures of the Dorset culture. To Plumet, this feature symbolically represents the vertebral column, the structure that carries the central nervous system integrating the family in dwellings and, in longhouses, linking the entire community.

We cannot reconstruct with any confidence the symbolic associations of Palaeo-Eskimo architecture, but the specifics of such reconstructions are not relevant to the purpose of this paper. The box-hearth/midpassage/longhouse complex appears to be too elaborated to be explained on purely functional grounds. The fact that hearth and axial features were seen in symbolic terms by ethnographically-described peoples with whom the Palaeo-Eskimos possibly shared a distant historical relationship, further suggests that such symbolism characterized Palaeo-Eskimo structures. We might propose that these symbolic associations—whatever they actually were—account for the temporal persistence and wide distribution of this architectural complex. They also provide the rationale for selecting this complex, out of the wide range of other forms of Palaeo-Eskimo architecture, as a measure for discussing the nature of variability and cultural change in the Palaeo-Eskimo tradition.

Architectural and Cultural Change in the High Arctic

Although, as was noted earlier, axial features are typical of Palaeo-Eskimo dwellings in many regions, the midpassage constructed from parallel rows of vertically-placed slabs and containing a central box-hearth is a characteristic variant that seems to have appeared first in the High Arctic regions of Canada and Greenland. This specialized form has not been found to date in association with the earliest Palaeo-Eskimo occupations in more southerly regions. If this absence is not an artifact of archaeological chance, it suggests that the distinctive midpassage feature may have been an innovation developed by early occupants of the High Arctic. Knuth (1983: 12) refers to the hearth and midpassage of the Independence culture as "a kind of universal furniture unit serving as lamp, heating installation, cooking stove, kitchen cupboard, firewood box, and clothes chest."

Whatever the particulars of its use, most researchers would support Schledermann's (1990: 318) interpretation of the early Palaeo-Eskimo axial feature with its central hearth as an architectural element that was adapted to providing warmth and light during winter cold and darkness. Whether dwellings containing these features were used primarily during the early winter, as suggested by Schledermann, or throughout the year as proposed by Knuth (1967), cannot be established on the basis of the evidence presently available. From the perspective of the postulated symbolic associations of Palaeo-Eskimo architecture, the connection of certain beliefs and practices only with specific seasons is common among northern peoples whose environment is characterized by extreme seasonal change.

As was noted above, the disappearance of the midpassage and box-hearth during the subsequent period of High Arctic occupation, ascribed to peoples of the Pre-Dorset complex, may be associated with the development of stone lamps for cooking, heating and light. This invention, combined with an economic pattern focusing on the acquisition of sufficient sea mammal oil to provide winter fuel, may have freed Palaeo-Eskimo groups from the necessity of building box-hearth/midpassage structures. Such an interpretation might indicate that architectural evidence cannot be used to support the suggestion that High Arctic occupations associated with the Pre-Dorset complex resulted from the arrival of new immigrants from the south. Rather, the change in architectural remains may simply reflect the adoption of stone lamp technology, and the subsequent abandonment of older architectural forms. The postulated symbolic significance of central hearths may have been an insufficient reason to preserve its use among peoples who had acquired a new and more convenient way of heating and cooking. On the other hand, it is entirely possible that Palaeo-Eskimo groups maintained the symbolic divisions of domestic space without the use of the architectural markers which are preserved as archaeological evidence of such a practice. This could have occurred both during the seasonal use of dwellings which lacked a tangible midpassage and among groups which had abandoned the use of such structures.

The reappearance of the box-hearth/midpassage complex with Independence II/Early Dorset occupations during the centuries between approximately 2800 to 2500 BP cannot be clearly associated with a technological innovation. The reversion to older forms occurs among groups with economic patterns that are more diverse, and in some cases more focused on the hunting of sea mammals which would have provided oil for heating and lighting. Such a situation might be connected to the resurgence or geographical expansion of groups which had retained the earlier architectural forms, perhaps in regions that are not yet explored archaeologically. Lacking a functional explanation for the reappearance and wide distribution of much more ancient architectural features, one may propose that some isolated groups may have retained such forms for culturally determined reasons, together with the use of new and more convenient technology. The symbolic associations with such architectural features, as discussed above, may be related both to their retention among some groups, and to their subsequent wide dispersion not only across the High Arctic but into some of the Low Arctic regions occupied by Palaeo-Eskimos (cf. Damkjar, this volume).

By the time of the Late Dorset expansion into the High Arctic in the period after approximately 1500 BP, a relatively uniform version of the midpassage had developed and spread through most Dorset groups. Very similar structures, characterized by a stone-paved passage flanked by rows of elongate cobbles and containing hearth-slabs with lamp support stones, are known from southeastern Hudson Bay (Harp 1976:132) to Dundas Island (McGhee 1981) to Ellesmere and Axel Heiberg islands (Sutherland 1989, 1993). Midpassage architecture, which seems to have originated in the High Arctic, appears to have been reintroduced at this time by immigrants from areas to the south.

Previously in this paper, it was proposed that the survival and later geographical expansion of the box-hearth/midpassage complex might be related in part to the symbolic associations of this architectural form. In Late Dorset times, the reintroduction of these architectural elements to the High Arctic, and their association with the hearth-row/longhouse complex, may have a similar interpretation. On the basis of current evidence (setting aside the question of possible Middle Dorset communal houses reported from the Foxe Basin region), the longhouse complex appears to have originated or at least developed its characteristic form in the Nunavik region (Damkjar 2000: 178). The elaboration of this architectural feature and its spread across Arctic Canada as far as High Arctic Greenland, like the reintroduction and expansion of the box-hearth/midpassage complex at an earlier period, is difficult to understand on purely functional grounds. It may be that both events were connected to the elaboration and spread of concepts involving the symbolic associations of the architectural forms.

Summary and Conclusions:

It has been suggested that much of variability seen in Palaeo-Eskimo architecture can be attributed to factors relating to local conditions and use, rather than to cultural prescription. In order to more clearly understand the cultural concomitants of architecture, this paper concentrated on three linked features characteristic of Palaeo-Eskimo construction in the High Arctic: the box-hearth, midpassage and longhouse. It was proposed that this complex is connected to and constrained by a system of symbolic meanings, and that it is this link which makes the complex of architectural features a useful tool in studying the nature of cultural change in the High Arctic.

The picture of architectural and cultural change that results from this exercise seems to be one of survival, development and elaboration in a local area, followed by extensive spread either into unoccupied regions or through groups already in possession of local territories. Such a picture is consistent with the view that Palaeo-Eskimo society may be most usefully conceived as "a mosaic of small named local groups of a few hundred people, each sharing most characteristics with adjacent groups, and each changing along its own trajectory over time" (Sutherland 1996:287). Krupnik (1993) argues that Arctic hunting cultures are characterized by their capacity to increase local populations quickly, adapt rapidly to changing conditions, and expand into unoccupied environments, but also by the vulnerability of local populations to extinction in the face of local environmental events. The history of the appearance, expansion and disappearance of the Independence I box-hearth/midpassage complex; its subsequent re-emergence in the Independence II-Early Dorset period, and the development and spread of the hearth-row/longhouse complex in Late Dorset times, may be architectural witnesses to events of this nature.

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Chapter 7: New Evidence for Prehistoric Links Between Alaska and Arctic Canada: the Satkualuk Site in the Mackenzie Delta.

Introduction

In August of 1993, during the final season of the NOGAP (Northern Oil and Gas Action Plan) Archaeology Project in the Mackenzie Delta-Beaufort Sea Region, a brief survey of southern Richards Island was carried out under contract to the Canadian Museum of Civilization. The purpose of the project was to test a geomorphic terrain model for locating archaeological sites. Sixteen new sites were recorded on southern Richards Island; five of these sites were considered to be prehistoric, but lacked sufficient diagnostic material to allow specific cultural assignment (Sutherland 1994).

During this survey, I hoped to find evidence of early prehistoric occupation, in particular that of the Arctic Small Tool tradition, which had not been previously documented in the immediate Mackenzie Delta area. The sand and gravel exposures situated on relatively high terraces, which are a feature of Richards Island, represent the type of landscape that had produced such sites further east on the Tuktoyaktuk Peninsula (LeBlanc 1991a; Sutherland 1991). During helicopter ferrying between Tuktoyaktuk and the study area, a number of locations that appeared to have archaeological potential were observed. One such area was a stretch of the eastern coastline of Richards Island bordering on Kittigazuit Bay (Figure 7-1). After the work on southern Richard Island was completed, some of the exposures that were situated on higher terraces in this area were examined. On one exposure north of the large Inuvialuit site of Gupuk (69°23' 00" N, 134°00'57" W) a surface scatter of artifacts that included chert flakes and scrapers was found. The site was investigated for another two days and more chipped stone artifacts were recovered, as well as ceramic sherds and animal bone fragments. The site (NiTs-4) was named Satkualuk, which in Siglit, the language of the Mackenzie Delta Inuvialuit, means "tool from long ago".

The presence of pottery with linear-stamped decoration, a remnant microblade industry, frequent use of burination techniques, and a distinctive array of bifacial and unifacial stone tools from Satkualuk, suggested a close relationship to the Choris culture of northern Alaska (Giddings 1964; Giddings and Anderson 1986). Confirmation of the cultural affiliation of the site would indicate a significant eastward extension in the known range of the Alaskan Choris complex. In view of the potential importance of the site, a further month's work was carried out in the summer of 1994. This work included mapping the site and conducting additional test excavations, as well as helicopter and foot survey of surrounding areas.

Several days of reconnaissance work in adjacent regions of Richards Island resulted in the location of six additional sites which yielded lithic artifacts indicative of occupation prior to the ancestral Inuvialuit settlement of the area. It now appears that the Satkualuk site is not an isolated phenomenon, but one of a series of occupation localities along the northeastern coast of Richards Island.

This apparent concentration of early sites may be related to a unique feature of the local environment. Friesen and Arnold (1995) delineate a zone occupied each summer by thousands of beluga which congregate in Kittigazuit Bay to feed and raise their infants. This zone approaches the shore of Richards Island along a stretch of approximately 20 kilometres of coast, and the Satkualuk site is located midway along this

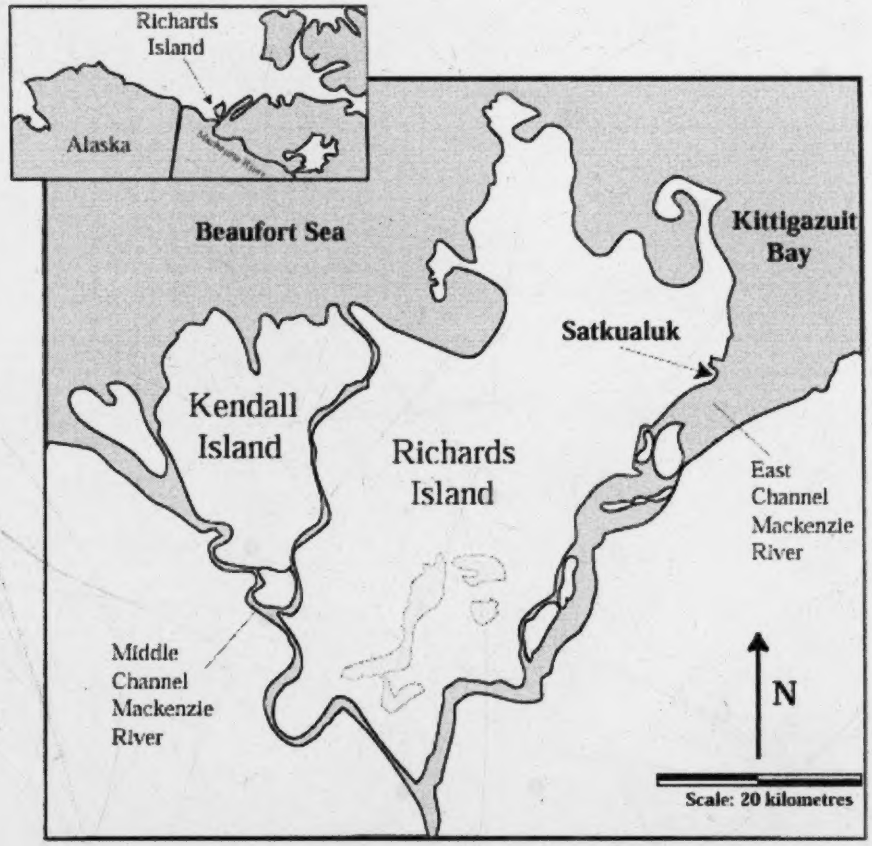
Richards Island
Alaska
Mackenzie River
Beaufort Sea
Kittigazuit Bay
Satkualuk
Kendall Island
Richards Island
East Channel Mackenzie River
Middle Channel Mackenzie River
N
Scale: 20 kilometres

Figure 7-1: Location of Richards Island and the Satkualuk site (NiTs-4).

coast. Several of the other early sites that were discovered, as well as more recent ones such as the large Inuvialuit village of Gupuk, are located along this same stretch of coastline. This portion of Richards Island, and the adjacent waters of East Channel and Kittigazuit Bay, do not seem to have changed significantly for several millennia. Such a concentrated resource, when combined with the seal, caribou and fish stocks of the outer Mackenzie Delta, may have produced a local environment which, for the past several thousand years, early Alaskan hunters would have found both familiar and attractive.

Site Description:

Satkualuk lies close to the edge of the rolling upland which characterizes the northern portion of Richards Island, between 35 and 40 metres above sea level and approximately 200 metres from the foreshore flats bordering Kittigazuit Bay. Its location provides an excellent view eastwards over the estuary of East Channel. Tundra and shrub tundra vegetation cover most of the area, but there are occasional wind-deflated sand exposures containing lag gravel. Satkualuk was discovered in one such deflated zone (Figure 7-2).

Preliminary examination of the exposure revealed artifacts scattered over an area measuring at least 250 by 180 metres, with a concentration approximately 40 metres in diameter. The boundaries of the site were not determined, since the scatter of artifacts extends into areas covered by tundra vegetation. Controlled surface collecting was carried out in the deflated zone of the site. Five 1 x 1 meter test units were excavated in 1993, and an additional twenty-four 1 x 1 meter units in 1994. The majority of the excavation units were situated where surface cultural material was most heavily concentrated. Testing was also done around the periphery of the wind-deflated exposure in areas covered by vegetation.

Site Features

Apart from several rock scatters in the deflated portions of the site, which may represent the remains of tent rings, the only other feature visible from the surface is a low mound, approximately 15 metres in diameter, located on the edge of the zone where surface artifacts are most heavily concentrated. The periphery of this roughly circular area supports vegetation cover, and a cluster of boulders lies at its highest point.

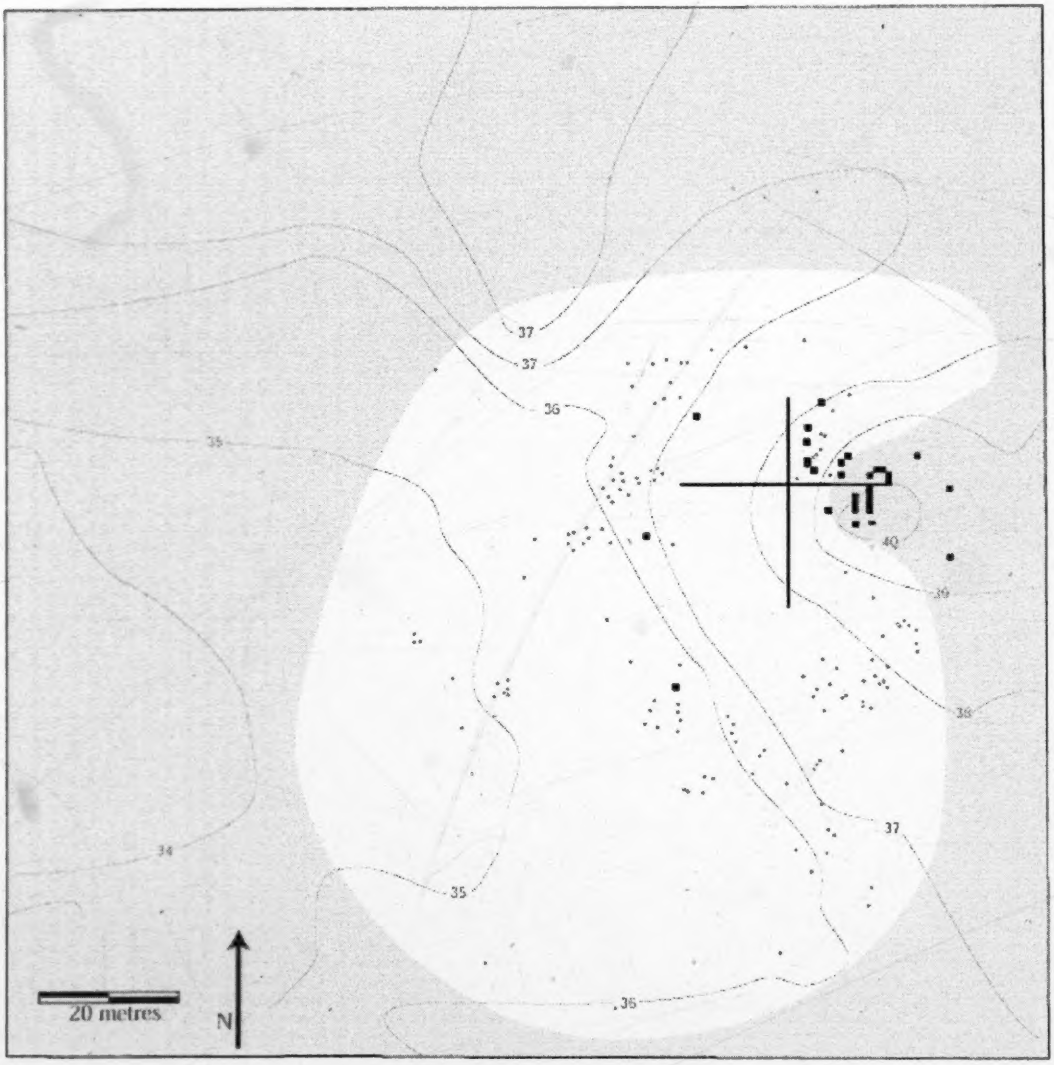

Figure 7-2: Contour map of the Satkualuk site, showing excavations (black squares), surface rocks (gray dots) and surface collecting reference axes (black lines). Shading marks the area covered by vegetation.

Excavations in this feature revealed a number of hearths, some associated with what appeared to be living floors, at depths of 35-75 cm. below ground surface. Four radiocarbon dates were obtained from samples associated with these floors, and the dates are consistent with the stratigraphic positions of the floors. These deposits were only partially excavated due to lack of time, and further investigation is needed in order to determine the size and shape of the possible dwellings with which these living floors are associated.

Artifact Assemblage

Surface collection and excavation produced an assemblage of 1391 specimens, including 37 ceramic sherds and 302 finished lithic artifacts. The majority of these were recovered from the surface of the site or from shallow excavations in the northeastern portion of the wind- deflated exposure. Some artifacts were found in the buried deposits uncovered in the low mound, but few of these were diagnostic.

Most of the ceramics are linear-stamped body sherds (Figure 7-3*l*) tempered with fiber, probably feathers; one is possibly cord-marked (Figure 7-3*k*). Anderson considers cord-marked pottery to be the earliest type found in Choris culture, while for several subsequent centuries both designs were made by Choris people with linear-stamped ceramics continuing into Norton (Giddings and Anderson, 1986: 315).

Lithic artifacts account for 87% of the finished specimens recovered from Satkualuk. Raw materials used include a variety of cherts, quartzite, and at least one example of clinker (Raymond LeBlanc, personal communication).The presence of clinker, a heat-fused rock that occurs on the Cape Bathurst Peninsula (LeBlanc (1991b), suggests that the people from Satkualuk may have travelled, or at least had connections, as far as Cape Bathurst, almost 300 kilometers east of the Delta.

The assemblage includes 14 burins, including specimens not unlike some of the burins found in Denbigh or other ASTt assemblages (Figure 7-3*g*), as well as burins on bifaces (Figure 7-3*h*) which are more diagnostic of Choris culture. Twenty-two burin spalls were also recovered. Among the most characteristic specimens are 35 burinated flakes and unifaces. Together with linear-stamped pottery, the burinated lithics provide the strongest indication of a Choris affiliation for the site.

The Satkualuk assemblage also included 44 microblades (Figure 7-3*j*) and 17 microblade cores or fragments (Figure 7-3*i*). The poor quality of workmanship and the lack of standardization in the cores from Satkualuk is notable when compared with Denbigh assemblages, and suggests a remnant industry that one might expect in Early Choris. Two core tablets were also found. One of these is from a relatively large core, and was found in association with a large microblade in an area of the blowout located at a considerable distance from the main concentration of surface artifacts; these specimens may indicate an occupation much earlier than that represented by the Choris material.

The assemblage includes forty-two unifacial endscrapers (Figure 7-3*c*), a relatively high proportion of the artifacts found. Many are similar to those in Denbigh and other ASTt assemblages (Giddings and Anderson 1986). Eight flakeknives were recovered from the site, generally similar to those which occur from Denbigh through to Norton assemblages (Figure 7-3*d-f*). The collection includes six drills and gravers, of forms which have general distribution in Denbigh and later assemblages. Thirty-one bifaces, most of them fragmentary or of undiagnostic style (Figure 7-3*b*), were recovered. Lanceolate bifaces of the type associated with Choris assemblages are represented by only two small medial fragments. The only complete biface is a small sideblade inset (Figure 7-3*a*); tips of small endblades, and unfinished specimens which were probably intended as small knife or spear points, were also found.

Twelve coarse stone tools, manufactured from quartzite, were recovered from the site. The assemblage also includes two hammerstones, two abraders, one polished pebble, a variety of retouched flakes, several core and nodule fragments, and numerous unretouched flakes.

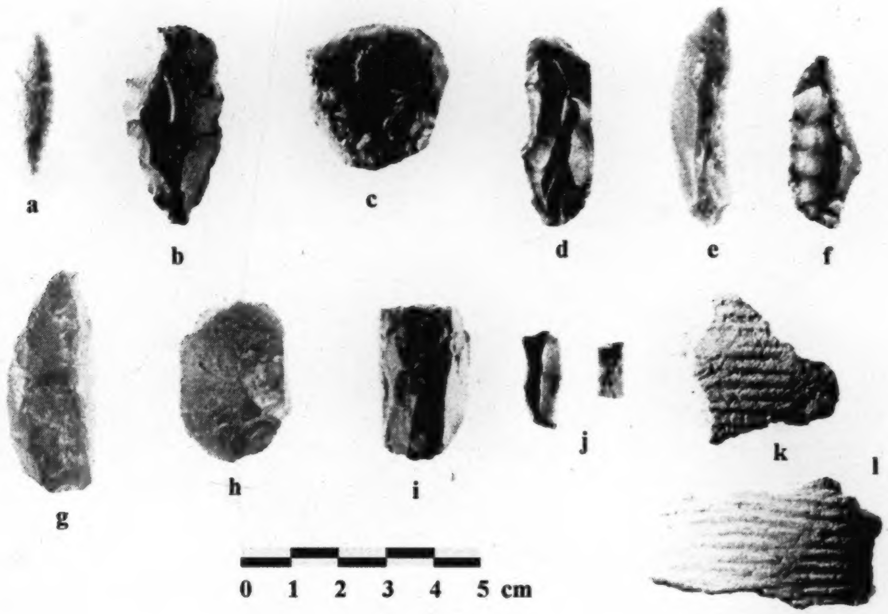

Figure 7-3: Artifacts from the Satkualuk site: *a* sideblade; *b* biface; *c* unifacial scraper; *d-f* flakeknives; *g* burin; *h* burinated biface; *i* microblade core; *j* microblade fragments; *k,l* ceramic sherds.

While the majority of the artifacts recovered appear to be most consistent with a Choris affiliation, some specimens suggest a closer relationship to the Denbigh Flint Complex and even earlier cultural units.

Faunal Remains:

Relatively few faunal remains were recovered. Seal and caribou were represented in the excavated assemblage, and beluga whale bone was found on the surface of the site. A lack of organic artifacts, as well as the scarcity of faunal material in both the buried deposits and on the surface of the site may be related to poor preservation due to acidic soil conditions. Sampling problems may also have been a factor, however, and future excavation in the areas of the site that have intact deposits may produce more organic remains.

Radiocarbon Dates:

Seven AMS radiocarbon dates are currently available for Satkualuk, and the range of dates supports the artifactual evidence in suggesting that more than one component is represented at the site. These dates are listed in Table 7-1.

Mason and Gerlach (1995) have attempted to rationalize the confusing series of ages which have been ascribed to the Choris culture. They conclude that the large number of Choris localities at Cape Krusenstern date from later than 2500 radiocarbon years ago but earlier than 1600 years ago, and that from other localities in western Alaska, most of the acceptable Choris dates range between approximately 2700 and 2200 years ago.

Location of Sample [1]	***Material***	***Date***	***Lab Number***
Deflated zone	caribou antler	1450± 60	Beta-65520
Deflated zone	caribou bone	1920± 70	Beta-65519
Deflated zone	charcoal	4710±100	Beta-77811
Buried deposit, depth 40-45 cm	seal bone	1720± 50	Beta-77810
Buried deposit, depth 55-60 cm	caribou (?) bone	2230± 60	Beta-77809
Buried deposit, depth 70-75 cm	charcoal	4480± 50	Beta-77808
Buried deposit, depth 55-60 cm	charcoal	6140± 70	Beta-80071

[1] Note that depth is measured below local surface, and does not necessarily indicate stratigraphic position. The four samples from the buried deposits are listed in stratigraphic order from late to early.

Table 7-1: Radiocarbon dates from the Satkualuk site.

The radiocarbon dates from the lowest of the stratigraphic levels at Satkualuk (6140 and 4480 BP), as well as the date of 4710 BP from the deflated zone, suggest an occupation of the site significantly earlier than Choris times, and probably relating to ASTt or earlier cultural complexes. The date of 2230 BP from an intermediate occupation layer is within the Choris range, while the date of 1720 BP from the upper stratified layer and the date of 1920 BP from the deflated zone, may relate to late Choris occupations. The final date of 1450 BP probably derives from a more recent use of the site.

Assessing Satkualuk: Relationships and Significance

Since its discovery over 40 years ago on Kotzebue Sound, the Choris culture has remained as something of an enigma. Choris artifacts show intriguing similarities to those from both the earlier Denbigh Flint Complex and to later Norton tradition materials

(Dumond 2000: 9-13). The Choris culture may represent a link between the ASTt and later traditions, or between Siberian and Alaskan traditions, but it is so poorly known that its true position and significance are difficult to assess.

With specific reference to the Palaeo-Eskimo occupations of High Arctic regions, I have proposed (Sutherland 1996) that early Arctic cultures should not be envisaged as representing widespread populations with identical technologies. Rather, on the model of the historic Inuit of the Central Arctic, they may be more usefully viewed as a mosaic of local groups adapted to local resources, each sharing some elements of culture with neighbouring groups, and each developing along its own distinct trajectory over time. This view would seem to be particularly apt as a means of conceptualizing the population associated with Choris culture, which Mason and Gerlach (1995) have portrayed as an archaeological "horizon", a widespread but thin veneer of occupational remains left by a small and highly mobile population. The discovery of an artifact assemblage characterized by many attributes of Choris culture in the Mackenzie Delta, over 1000 kilometers to the east of previously known similar sites on the coasts of the Chukchi Sea, represents a significant geographical extension of this poorly understood cultural complex. It also suggests that the cultural implications of the Choris horizon may be more extensive than have been previously thought.

Until Satkualuk was discovered, no clear evidence of human occupation earlier than that of the Inuvialuit during the past few centuries had been found in the actual Mackenzie Delta, despite the fact that ASTt sites have been located in adjacent areas including the Yukon Coast, the Tuktoyaktuk Peninsula, the Anderson Plain, and Cape Bathurst Peninsula. In a re-examination of the large but thoroughly mixed collection from Engigstciak, Clark (1976) has suggested that "post-ASTt correlates with Choris/early Norton" exist in the form of discoid scrapers, Donnelly-like burins, a single Choris-like harpoon, and adzes, as well as antler wedges, lateral insets, small stemmed points, burinated flakes, a single drill, and a variety of pottery types including linear impressed. Greer (1991) has suggested that the bifacial adzes and some of the endblades from the Trout Lake locality are similar to those of Choris assemblages from Alaska. From sites in Hutchison Bay on the Tuktoyaktuk Peninsula, at Mallock Hill on the Cape Bathurst Peninsula (LeBlanc 1991a, 1994) and at the Lapointe site at Bloody Falls on the Coppermine River (McGhee 1970), a few Choris-like parallel-flaked bifaces and biface fragments have been found.

Two other important sites that should be considered in this discussion are the Lagoon site on Banks Island excavated by Arnold (1981) and the closely related Crane site on Cape Bathurst peninsula excavated by LeBlanc (1994). These sites date to a time at the recent end of the Choris range, or a few centuries later. Their artifact assemblages are quite distinct from Choris, although LeBlanc considers the needles from the Lagoon site and some side-notched endblades from the Crane site to resemble those of Choris.

The Satkualuk assemblage is distinct from Crane and Lagoon, both in the lithic tools and in the presence of pottery. However, the cultural complex represented at Lagoon and Crane, which shows a mixture of Canadian Arctic and Alaskan characteristics, may have derived from a precursor such as Choris culture. The co-occurrence of several elements of Choris technology at the Satkualuk site strengthens this possibility. The presence of such sites in the western Canadian Arctic argues for a more than tenuous connection between Arctic Canada and Alaska during the period prior to the Thule Inuit expansion of the past millennium.

The Potential Significance of Satkualuk

Despite the preliminary nature of the investigations, there is sufficient diagnostic material in the collection from Satkualuk to support the view that some of the components at the site indicate a Choris presence in the Mackenzie Delta. It would appear that small and mobile groups who left the Choris "horizon," to follow the terminology used by Mason and Gerlach (1995), wandered at least as far eastward as the Mackenzie River and established a coastal occupation similar to those known from northwestern Alaska.

The site not only holds a potential for increasing our knowledge of the Choris culture, but also for aiding our understanding of prehistoric relationships between Alaska and the Canadian Arctic. The presence of an eastern outlier of this early culture may be significant in assessing the development of the eastern arctic Palaeo-Eskimo tradition. In particular, it may increase our understanding of the development of the Dorset culture, a process which occurred between approximately 3000 and 2500 years ago in areas well to the east of the Mackenzie River. The possibility of Alaskan influence on this development has been argued in the past without the benefit of archaeological evidence.

The prehistory of Arctic Canada has been generally viewed in terms of two major migrations: the first by Palaeo-Eskimos between 5000 and 4000 years ago, and the second by Neo-Eskimos who moved eastward about 1000 years ago. The Satkualuk site suggests that the actual picture may have been considerably more complex, with multiple movements of peoples eastwards from Alaska to the western portions of the Canadian Arctic. Cultural developments in Arctic Canada, previously thought to have occurred in isolation from developments in Alaska, may in fact have been influenced by knowledge brought to the Canadian Arctic by such immigrants.

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Chapter 8: The Norse and Native North Americans

Who were the "Skraelings"?

During the centuries that the Norse occupied their settlements in southwestern Greenland, and made occasional ventures to the northeastern coasts of North America, that portion of the continent was occupied by three discrete aboriginal populations. The forested coasts extending northwards from New England to central Labrador were the homelands of several distinct Indian peoples. These groups were ancestral to the Innu of Labrador, the Beothuk of Newfoundland, and the Micmac, Maliseet, Penobscot and other Algonkian-speaking peoples of the lands to the south of the St. Lawrence River. Iroquoian-speaking communities who occupied the St. Lawrence valley upstream from the present location of Québec City, may have made summer visits to the Atlantic coast, as did their sixteenth century descendants.

The treeless tundra regions of northern Labrador and the Canadian Arctic Islands were the home of a Palaeoeskimo people known as the Dorset culture, ancient inhabitants of the Arctic whose ancestors had pioneered these lands over 4000 years ago. It may have been the remains of Dorset settlements which Eirik the Red discovered during his initial exploration of southwestern Greenland, but archaeological evidence supports the saga statements that Dorset people no longer occupied southwestern Greenland between A.D. 1000-1400. However, Dorset people continued to live in northwestern Greenland, perhaps in pockets along the Greenlandic east coast, the Canadian Arctic islands, and the tundra regions of northern Labrador and the Ungava Peninsula between the Labrador Sea and Hudson Bay. The Dorset people and their way of life disappeared from the Arctic at some time during the period between the thirteenth and fifteenth centuries.

At about the same time that the Norse reached Greenland, another aboriginal people known as the Thule culture were moving eastwards across Arctic Canada from their homelands in Alaska. During the eleventh or twelfth centuries, these ancestors of the Inuit rapidly traversed the ice-choked and barren regions of the Central Arctic, and reached the western shores of Baffin Bay where they found an environment with resources similar to those of their Alaskan homeland. Here they flourished, gradually displacing the Dorset occupants of the area. By the time that the Norse colonies disappeared, the Inuit were in possession of all of Greenland and Arctic Canada.

Norse accounts of contact with aboriginal peoples in North American and Greenland are few and vague (McGhee 1984b, Arneborg 1997). The saga accounts are oral traditions which were recorded in writing at least two centuries after the events which they report, so we cannot be confident that the brief descriptions of aboriginal people, their boats, weapons or ways of life, are accurately preserved through generations of transmission. The annals and other accounts which record events during the thirteenth to fifteenth centuries were written shortly after the events which they reported, but their reliability may distorted by political or religious considerations related to the motives for recording the events (see Sigurdsson, this volume). In general, the historical records deriving from the Norse colonies can only be considered as indicating when and where some contacts occurred between Norse and aboriginals, and providing hints as to the nature of some of these meetings. We must assume that other unrecorded contacts did occur, and perhaps that only encounters of a certain nature were thought worthy of record, or were sufficiently strange or striking to survive oral traditions or to be preserved in written accounts.

The Norse applied the derogatory term "Skraeling" to all the aboriginal groups whom they met in the New World, including both those encountered during the early Norse voyages to Vinland and Markland, and those who moved into Greenland between the twelfth and thirteenth centuries. One of the tasks of archaeology, therefore, is to determine which aboriginal populations encountered the Norse, and the nature of the relationships which developed at different places and at different periods. The encounters are best summarized in terms of the four named geographical areas which the Norse occupied or explored in the northwestern Atlantic: Greenland, Helluland, Markland and Vinland. Each of these areas had a distinct history of aboriginal contact, with encounters occurring at different periods in the history of Norse occupation, involving different peoples, and probably producing quite different results.

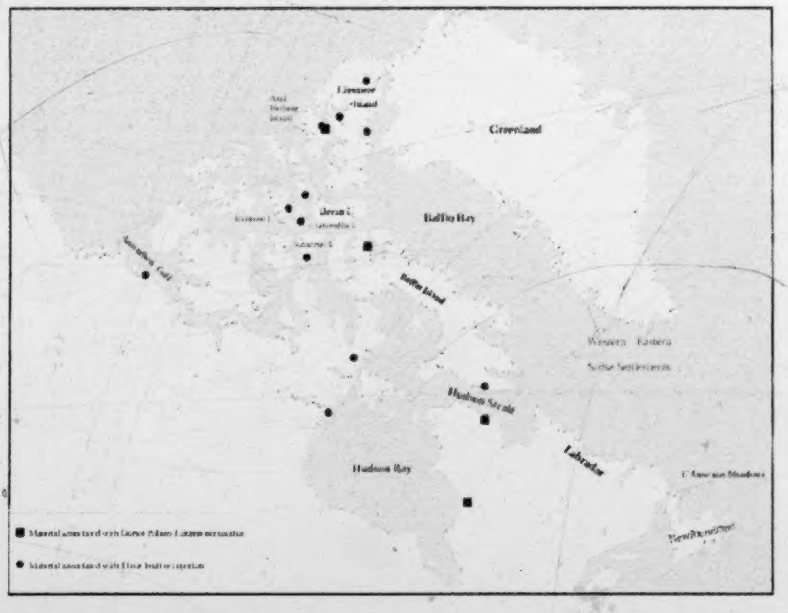
Ellesmere
Island
Greenland
Devon I.
Baffin Bay
Baffin Island
Western Eastern
Norse Settlements
Hudson Strait
Labrador
Hudson Bay
Newfoundland

Figure 8-1: Locations of Norse-related objects found in association with North American aboriginal occupations.

Markland and Vinland: Contact With Indians

The first recorded contact occurred in the forested areas named Markland and Vinland, around AD 1000, during the early Norse voyages of exploration to the west and south of Greenland. The most adequate descriptions relate to meetings in the vicinity of the Norse stations in Vinland, involving trade followed by skirmishes with the natives, and it is clear that the presence of a hostile native force was an important element in the Norse decision to abandon attempted settlement of the region. Archaeological evidence indicates that the Skraelings of Vinland, as well as those whom the Norse encountered and fought with in Markland, must have been Indians and probably ancestors of the Newfoundland Beothuk and the Labrador Innu. Norse exploration parties probably encountered other groups during coasting voyages around the Gulf of St. Lawrence. These would have included ancestral Micmac and Maliseet, or even Iroquois encountered during summer hunting or trading journeys to the Strait of Belle Isle and the Gaspé. Indian populations around the Gulf of St. Lawrence must have been significantly larger than those which would have been met along the subarctic coasts of Labrador and Newfoundland, and the Norse would have been extremely cautious in dealing with such groups.

Archaeological evidence relating to Indian-Norse contact is practically non-existent. Although archaeological remains of Indian occupation have been found in the vicinity of the Norse settlement at the site of l'Anse aux Meadows, there is no indication that the people who left these remains lived there at the same time as the Norse. The only possible hint of contact comes from a stray archaeological find in Greenland: a stone arrow point, very similar in style and material to those used during this period by Indians of Newfoundland and Labrador, was found eroding from the Norse graveyard at Sandnes in the Norse Western Settlement (Figure 8-2; Roussel 1936: 106).

Century AD	Norse/Indian	Norse/Dorset	Norse/Inuit
11?	Stone arrow point from Norse graveyard at Sandnes, Greenland	Soapstone lamp from Norse settlement at L'Anse aux Meadows, Newfoundland	
11-13		Iron fragment, Axel Heiberg Island	
12-13		Copper amulet, east coast Hudson Bay	
12-13		Copper fragment, south coast Hudson Strait	
12-13		Norse coin at Goddard site, Maine (?)	
13-14?		Spun yarn, northern Baffin Island	
13			Norse material from Bache Peninsula sites
12-14			Iron knife blade, Amundsen Gulf coast
12-14			Iron fragments, West Coast Hudson Bay
12-14			Metal fragments, central High Arctic sites
14?			Bronze pot fragment, Devon Island
13-14			Bronze balance fragment, Ellesmere Island
13-14			Iron specimens, extreme High Arctic sites
13-14			Carving of European, southern Baffin Island

Table 8-1: Summary of archaeological evidence of contact between Norse and Native North Americans. Estimates of the century during which the contact probably occurred are based on calibrated radiocarbon dates, analysis of artifact styles, and historical information. Locations of North American finds are indicated on Figure 8-1.

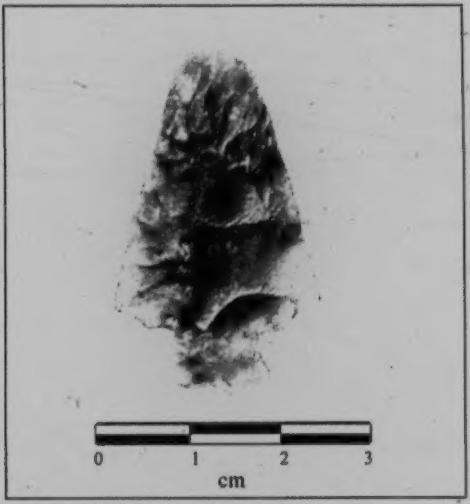

Figure 8-2: Chipped stone arrow point recovered from graveyard at Sandnes, Greenland.

Perhaps the absence of archaeological evidence of contact in North American sites is not due to chance. As will be seen later, a relatively low-level relationship between the Norse and the Inuit in Arctic Canada resulted in the transfer of metal and other European artifacts into native hands, and this material has been widely recovered from archaeological sites. If Norse-Indian encounters had been relatively extensive, a similar result would be expected. It therefore seems quite possible that Norse-Indian contact was no more extensive than that which was actually described in the Vinland saga accounts: brief attempts to trade quickly undermined by misunderstandings and outbreaks of violence. Such situations would have been exacerbated by the fact that the Norse in Markland and Vinland were far from their Greenlandic home base. Norse exploration parties in these distant regions would have been small relative to the size of communities which would have been encountered in Indian lands. In these lands, the Icelanders and Greenlanders would have found themselves in an alien forested environment, which must have contributed to their unease and insecurity. Contacts between Norse and Indians may have been limited to rare and cautious encounters, and the one archaeological hint of such contact -- the arrow point from the graveyard at Sandnes -- may be an accurate reflection of the nature of relations between the two peoples.

Helluland: Contact With Dorset Palaeoeskimos

The slight historical evidence for later Norse voyages to North America is limited to an account of a small Greenlandic ship being storm-driven to Iceland in 1347 while on a voyage from Markland. It has been suggested that the motive for such voyages was most likely the acquisition of timber for Greenlandic construction needs (Seaver 1999). Logging expeditions would most likely have been directed to the most northerly forested regions of the Labrador coast, adjacent to the tundra regions occupied at the time by Dorset peoples, and which were probably a portion of the treeless country which the Norse named Helluland. Contact between Norse and the Dorset occupants of these regions is evidenced by two archaeological finds of small objects made from smelted copper, products of a technology unknown to aboriginal peoples of northern North America, one of which was recovered from a twelfth or thirteenth century Dorset site in Richmond Gulf on the eastern coast of Hudson Bay (Harp 1975), and the other from a similar site on Hudson Strait (Plumet 1982: 262).

A coin which was recovered from an Indian settlement site on the coast of Maine was at first thought to be further evidence of Norse-Indian trade, and possibly as evidence that the Norse had penetrated regions as far south as coastal New England. The

Goddard site, where the coin was found, represents the remains of what may have been the largest coastal settlement in Maine at the time of the Norse voyages (Bourque and Cox 1981). The coin, however, probably does not represent evidence that the Norse traveled this far to the south of Greenland. The specimen is a Norse penny which was minted between 1065-80, more than one-half century later than the Vinland voyages recorded in Icelandic sagas. Re-excavation of the Goddard site, which radiocarbon dates indicate was probably occupied during the thirteenth century as well as at other times, yielded evidence that the occupants of the site chipped some of their stone tools from a particularly valuable type of chert which derives from a quarry in northern Labrador. At this time the region was in the hands of the Dorsets, who must have traded local resources with their Indian neighbors to the south. The northern Labrador stone supplies, the Norse penny, and two distinctive Dorset artifacts which were also found on the site in Maine, must have reached its occupants through an extensive trade network leading from the north (Bourque and Cox 1981). The penny probably reached North America on a Norse ship and passed into Dorset hands somewhere on the coast of Labrador, either through trade or as the result of a skirmish with a shore party. It then could have been traded southwards to Indian groups, along with a shipment of stone which came from this northern locality.

Contacts between the Norse and the Dorset occupants of northern Labrador may have begun significantly earlier than the date of the Norse penny. Evidence of such encounters is in the form of a small soapstone bowl, carved in a characteristically Dorset form, which was associated with the Norse remains at L'Anse aux Meadows. The Dorset people had deserted Newfoundland and southern Labrador several centuries before the arrival of the Norse in the region, and this lamp is most readily explained as an object which the Norse obtained from Dorsets or from an abandoned Dorset site in northern Labrador or the eastern Arctic prior to a visit to the Newfoundland settlement (Ingstad 1977: 92, 217).

Norse contact with Dorset people was not limited to Labrador. A three-meter length of yarn spun from the fur of Arctic hare was recovered from a Late Dorset dwelling at a site on northern Baffin Island. Spinning was not a part of the technology of northern aboriginal peoples, suggesting that this specimen originated in a European community. This supposition is supported by the identification of several goat hairs in the yarn, and by the discovery of very similar cloth made of yarn spun from hare fur and goat hair from the Norse farm site of Gården Under Sandet in the Western Settlement of Greenland (Walton Rogers 1998, 1999). The acquisition of a length of spun yarn by the Dorset people hints at a form of contact more complex than a simple trade in useful metal objects.

Far to the north, a piece of smelted iron appears to be associated with the Late Dorset occupation of a site on Axel Heiberg Island, on the extreme northwestern fringes of Dorset habitation. Together with material of Norse origin which has been recently recovered from a Late Dorset site in northwestern Greenland (Appelt *et al* 1998), as well as the yarn from Baffin Island, this find suggests that contacts between the Norse and Dorset people, although probably infrequent, must have occurred over a wide area from Labrador to the High Arctic.

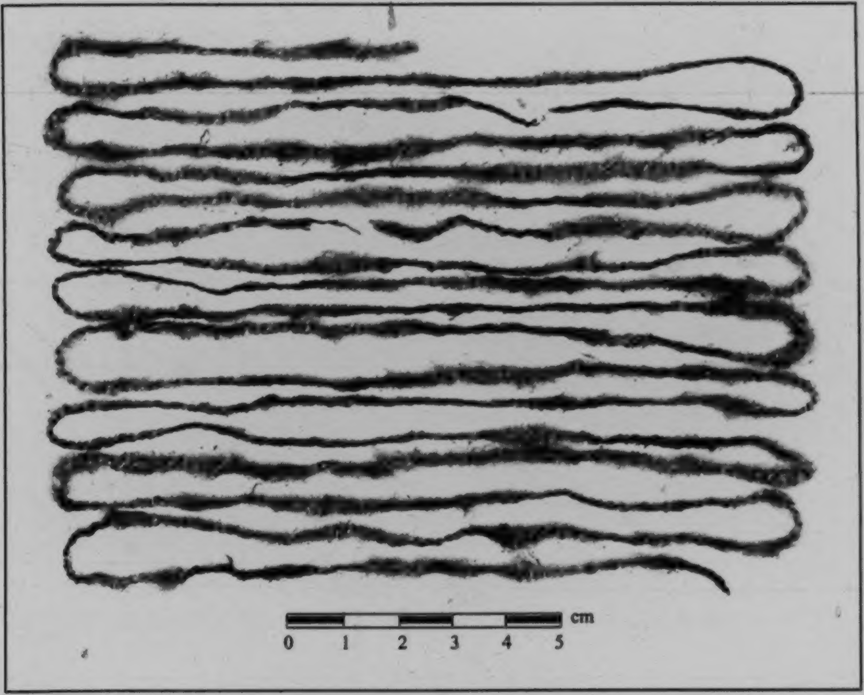

Figure 8-3: Length of yarn spun from Arctic hare fur, recovered in association with Dorset occupation at Nunguvik, northern Baffin Island.

Another archaeological hint of such contact appears in the occasional representation of European-like faces in the art of the Dorsets. The Dorset people produced numerous small sculptures in ivory, antler or wood, representing a wide range of animals and humans or human-like creatures. The art seems to have been intimately associated with their shamanistic religious beliefs and view of the world, and among their work are several forms of artifacts which may have been the equipment of shamanic practitioners. One such recurring artifact is in the form of a billet of antler, or occasionally of wood, containing relief carvings of human faces. The carvings on these batons depict a range of images, but a distinctive long and narrow face with a prominent straight nose and occasional hints of a beard, appears on several specimens, one of which came from the same Baffin Island winter house which produced the piece of Norse yarn. It is tempting to suggest that these portrayals may represent the strangers who occasionally landed on the coasts inhabited by the Dorset people.

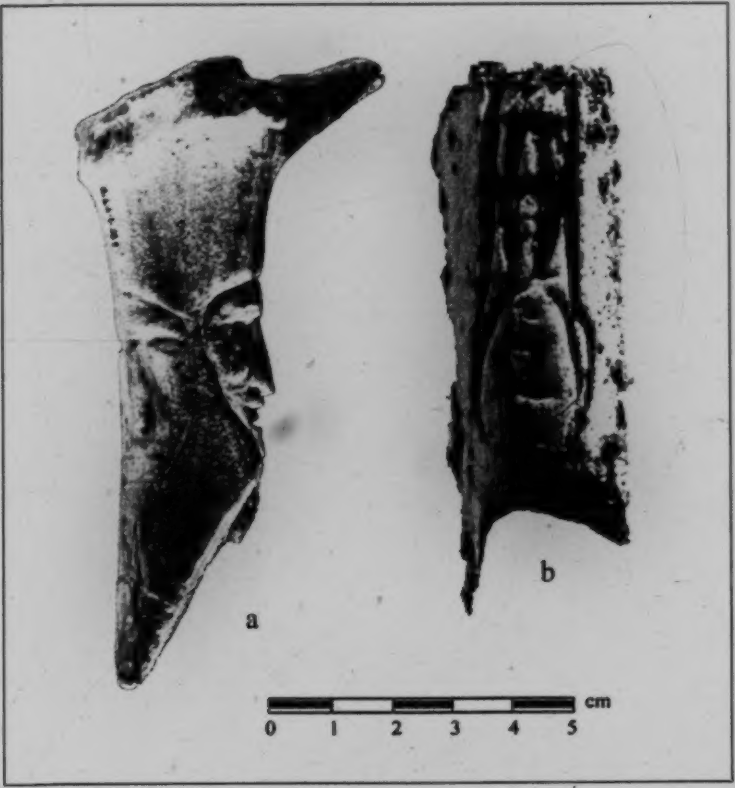

Figure 8-4: Examples of Dorset culture carvings representing faces with European-like features; *a)* antler carving from Bathurst Island; *b)* antler carving showing a European-like face opposed to a face more typical of Dorset representations, Axel Heiberg Island.

A possible early meeting with Dorset inhabitants of the barren east coast of Greenland may be described in Floemanna Saga, an account which is generally considered to incorporate much fictional material. There is also a possibility that some of the saga descriptions of Skraelings whom the Norse encountered in Markland, while on their Vinland voyages, may refer to Dorset people. Aside from these, none of the encounters with Skraelings mentioned in Norse sagas or annals can be convincingly interpreted as representing contact with Dorset groups. Yet if the Norse made occasional visits to Labrador over a period of two or three centuries in order to obtain timber or other commodities, they would have coasted the shores of Baffin Island and northern Labrador, areas which were occupied by Dorset people until the fourteenth century. Some communication with the Norse would seem to have been likely, and the archaeological finds noted above suggest that such contacts could have occurred sporadically from perhaps the eleventh to thirteenth centuries. The two peoples may have been more predisposed to establish a trading relationship than would the Norse and Indians. Both the Dorsets and the Norse were comfortable in the tundra environments where such meetings would have occurred, and Dorset populations were sparse enough in many regions that they would not have threatened small Norse exploration or trading parties.

Helluland and Greenland: Contact With Inuit

The most prolonged and probably the most extensive contact was to occur with the third group of aboriginals whom the Norse encountered, the Thule culture Inuit who moved eastward from Alaska to occupy most of Arctic Canada and Greenland at about the same time that the Norse were venturing into the northwestern Atlantic. The nature and timing of the Inuit expansion into the eastern Arctic is poorly understood. The process must have required a significant duration, and comprised several distinct phases. Initially, it is thought that ancestral Inuit must have moved quickly through the relatively unproductive channels of the Central Arctic, at some time between the eleventh and thirteenth centuries. Such a hazardous enterprise must have been propelled by a compelling motive, and it has been suggested that the Inuit of the western Arctic had learned that the Eastern Arctic held a source of iron, which was an extremely valuable commodity in early Inuit culture (McGhee 1984c). If this hypothesis is correct, the attracting source may have been either the meteoritic iron deposits of northwestern Greenland, or smelted metal which could be obtained by trade with the Greenlandic Norse. The Inuit of the Western Arctic may have learned of either source, as well as of the rich sea mammal resources of the Eastern Arctic, from the Dorset Palaeoeskimo occupants of Arctic Canada.

The early Inuit migrants from the Western Arctic are known to archaeology as the Thule culture people. Our views on the nature of relationships between these Thule Inuit and the Dorset, Indian and Norse peoples whom they encountered in the eastern Arctic, are based on our reconstruction of early Inuit social and economic patterns. The Thule people probably lived year-round in small communities which were largely composed of related families. The numbers of dwellings which appear to have been occupied contemporaneously in Thule archaeological sites suggest that these groups had an average population of approximately thirty to fifty people, although larger communities must have existed at locations where food was abundant. Most such communities may have supported at least ten to twenty hunters, used to working together and under the direction of an *umealik* or hunting captain. Armed with lances, and with bows powered by a cable of twisted sinew, as well as with warlike traditions developed in the large competing communities of coastal Alaska, such a band of warriors would have been a formidable enemy. They could have easily displaced the small and poorly armed communities of Dorset people from prime hunting localities, forcing them to retreat to more marginal areas. They would also have been a fair match for the crews which would have manned Greenlandic Norse ships on voyages to the north and west of the Norse settlements.

Archaeological evidence suggests that the early Inuit who expanded eastwards into Arctic Canada and Greenland during the period of the Norse Greenland colonies were more economically secure, and probably occupied larger and more complex communities, than their descendants of later centuries. In their dealings with the Norse, the Thule culture Inuit would not have been at any social, cultural or technological disadvantage to the expatriate European communities of Greenland. The Norse left no known accounts of possible encounters with the Inuit in Arctic Canada, and the records of contact in Greenland are meager, report only a few instances of hostilities, and are difficult to interpret. In contrast, a growing body of archaeological evidence demonstrates that material of Norse origin found its way into the hands and the trade routes of the Canadian Arctic Inuit. This evidence suggests a process of contact which may have been considerably more extensive and complex than the few skirmishes mentioned in Norse accounts. There is, however, considerable divergence of opinion regarding the nature of this process (Arneborg 1996, 1997).

These discussions centre on three quite different scenarios. The first was the prevailing opinion among archaeologists during the first half of the century, when Inuit occupations had not yet been dated and when evidence of contact was limited to Inuit sites in Greenland. This view was based on the lack of historical records reporting contacts, and suggested that Norse material in the hands of Inuit had been scavenged from the abandoned remains of the Norse colonies during the centuries after these colonies disappeared. This hypothesis assumed that Inuit sites containing Norse materials dated to later than the mid-fourteenth century, when historical accounts suggest a general Norse abandonment of the Western Settlement.

The past decades have yielded evidence for an Inuit presence in western Greenland significantly earlier than the disappearance of Norse occupation (Gulløv 1982), suggesting that Norse-Inuit relations must have been more complex than the simple looting of abandoned farms. Inuit sites in Arctic Canada, at which Norse materials have been found, have been dated to between the eleventh and fourteenth centuries and the associated European objects were therefore most probably derived from direct contact between Norse and Inuit. This assumption leads to two alternative scenarios regarding the nature of such contact. On the one hand, it may be suggested that most or all Norse material in the possession of Inuit living far to the north and west of the Norse colonies was obtained as a result of a single event: perhaps a successful attack by Inuit on a Norse ship's crew engaged in exploration or in the exploitation of a distant resource; perhaps the salvage of a wrecked Norse ship engaged in such activity; or perhaps a single major trading encounter occurring somewhere along the coasts of the Eastern Arctic (see Schledermann, this volume). Alternately the evidence can be interpreted as resulting from numerous minor encounters, occurring over a period of centuries and in several locations. The spatial and temporal distribution of materials of Norse origin, as well as the nature of such materials, may allow us to assess the relative probability of these alternate explanations.

Material of European origin, and which probably originated with the Greenlandic Norse, has been recovered from the archaeological remains of Thule Inuit settlements across much of the Canadian Arctic. Unfortunately, precise dates are not known for most of these sites, which have generally been assigned to "Early Thule" or "Classic Thule" phases assumed to have existed between the eleventh and fifteenth centuries A.D. A knife blade of smelted iron has been recovered from a Thule winter house on the Amundsen Gulf coast of the western Canadian Arctic (David Morrison, personal communication 1999); this specimen may have been traded across Bering Strait from Siberia, but it seems equally likely to have reached the area through trade routes from the eastern Arctic. Three small specimens of smelted iron have been found in Thule villages of similar age, and located at a similar distance from Greenland on the west coast of Hudson Bay in the central Arctic (McCartney and Mack 1973). To the north, four early Thule winter villages on the southern coasts of Bathurst and Cornwallis islands have yielded several pieces of bronze and smelted copper (Franklin *et al* 1981:16; McGhee 1984b: 75-76). Smelted iron objects have been found in Thule sites on Somerset Island (Whitridge 1999), northern Ellesmere Island and eastern Axel Heiberg Island (Sutherland 1989,1993).

The dispersion of these materials indicates the existence of widespread trade among the Inuit groups which occupied Arctic Canada during the Thule period, but tell us little about the way in which the metal first came into Inuit possession. The presence of specimens composed of meteoric iron at most of these sites indicates the existence of trade in metal which originated in northwestern Greenland, the only known source of meteoric iron in Arctic North America. A parallel route may have existed for the dispersion of Norse materials, perhaps from a single High Arctic source such as that described by Schledermann elsewhere in this book. The Thule culture sites located in the Bache Peninsula region of Ellesmere Island, and related sites in adjacent regions of northwestern Greenland, have produced the greatest concentration and widest variety of Norse materials known from an Inuit context (Schledermann 1980, 1990). If this concentration is the result of a single event, as Schledermann would seem to suggest, then this event may also have provided the source for much of the smelted metal found in Inuit sites elsewhere in Arctic Canada. On the other hand, this diverse collection of metal objects may have derived from a variety of sources.

A few Inuit sites in Arctic Canada have produced items which have greater potential for information on the nature of Norse-Inuit contact. One such item is a portion of a cast bronze pot, excavated from a Thule winter house on the coast of western Devon Island's Grinnell Peninsula (McGhee 1984b: 17). This pot appears to be of northern European origin, and of a type which was first produced during the late thirteenth or fourteenth century. If the incident of Norse contact in the High Arctic which is described by Schledermann occurred during the mid-thirteenth century, this pot may have come into Inuit hands as a result of a later episode, and hints at a more complex history of contact with the Norse. Fragments of bronze vessels have been also reported from Thule (Holtved 1944) and Late Dorset (Appelt et al 1998) occupations in northwestern Greenland.

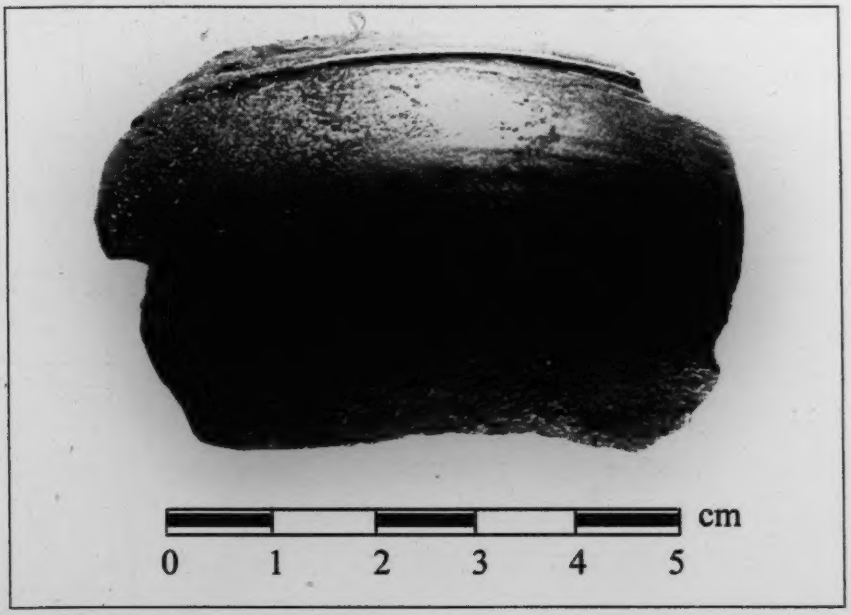

Figure 8-5: Fragment of bronze bowl from Thule culture Inuit site at Port Refuge, Devon Island.

A site on the northwestern coast of Ellesmere Island provides a further hint at the nature of Norse-Inuit relations. This evidence is in the form of a portion broken from a bronze balance of the type used by traders throughout the Norse world. The folding-arm design of this balance was in use throughout the Viking and Mediaeval periods, but the large size of this specimen is not typical of the earlier centuries of Norse culture. This is a type of artifact which we would expect to find in the possession of a Mediaeval Norse trader, and suggests the possibility of a more deliberate form of relationship between the two societies than that resulting from either a single shipwreck or the looting of abandoned farms.

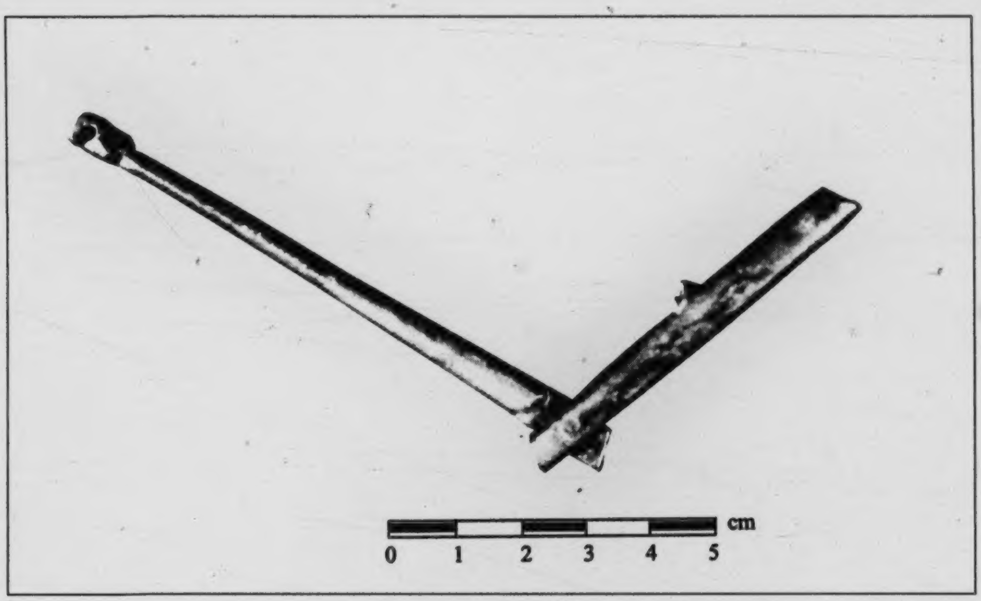

Figure 8-6: Portion of bronze balance arm from Thule culture Inuit site, western Ellesmere Island.

Another suggestion of more extensive contact is suggested by an object recovered from a Thule village on the south coast of Baffin Island (Sabo and Sabo 1978). This is a small figure carved from driftwood, depicting a human in what is apparently European clothing. The style of the carving is typical of local Inuit representation, with a flat featureless face and arms which have been reduced to short stumps. The figure is clothed in a hooded ankle-length cloak or gown, split up the front to waist level. Lightly incised lines may represent a decorative edging, and a pair of similar lines seem to indicate a cross on the middle of the chest.

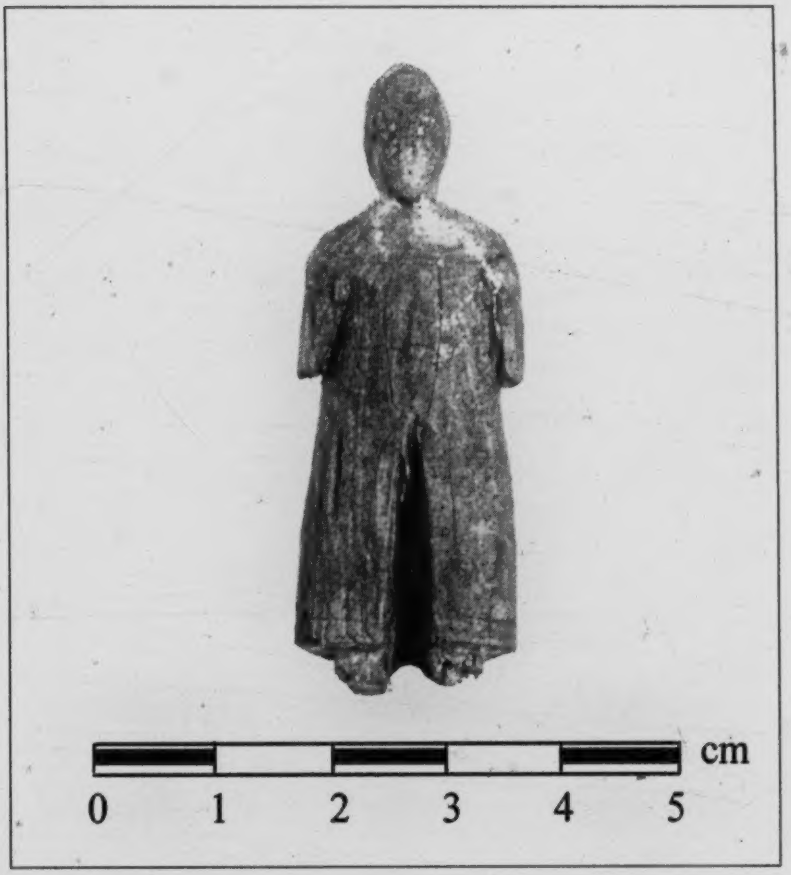

Figure 8-7: Inuit wood carving apparently representing a figure in European dress with an incised cross on the chest, recovered from a Thule Inuit site on southern Baffin Island.

It has been suggested that the gown and cross represents the clothing of a Christian priest, perhaps seen by the Baffin Island Inuit while he was on a missionary visit to the area. However, large pectoral crosses do not appear to have been worn by mediaeval priests, but by members of crusading orders (Mary-Rousselière 1982). In fact, the costume depicted on this carving could well represent that worn by Teutonic Knights during the thirteenth and fourteenth centuries when the order flourished in northern Europe. As their crusading efforts in Palestine declined, the efforts of the Teutonic knights were concentrated on fighting the Baltic and Slavic peoples bordering their power base in Prussia. During this period, the order attracted itinerant warriors from across northern Europe, and served a diversity of religious and political causes. The growing influence of the Hanseatic cities in Norwegian trade, after the establishment of their base at Bergen in 1344, may have provided the opportunity for individuals of this order to become involved in Norse matters. It would not seem impossible that such individuals would be attracted to missions organized in order to defend or rescue Greenlandic Christianity, such as those hinted at in fourteenth century records. It is generally thought that expeditions such as that called for in 1355 by King Magnus Eirikson did not actually occur (Jones 1986: 101; Seaver 1996:111). However, a possible representation of a Teutonic Knight from the eastern coast of Arctic Canada may suggest that this view should be reconsidered.

Conclusions:

The sagas and other records written by early Icelandic historians make no distinction between the three quite different aboriginal populations whom the Norse met in northeastern North America. All are referred to by the disparaging term "Skraeling," and the sagas and annals refer only to occasional antagonistic encounters.

The archaeological evidence suggests a more complex series of relationships, involving all three northern aboriginal populations, and taking different forms in each of the regions which the Norse occupied or visited at different times. The earliest contacts may have been with Indian inhabitants of Vinland, encountered in the decades around A.D. 1000 during the early period of Norse exploration. Archaeological information relating to such contacts is practically nonexistent, providing slight confirmation for the saga accounts of brief and hostile meetings between Indians and Norse. No archaeological finds hint at Norse penetration of regions to the south or west of the Gulf of St. Lawrence, and in fact the evidence for relatively dense Indian populations in these lands strongly suggests that the Norse would have been wary of visiting such regions.

Contact with the Dorset peoples of Arctic Canada may have begun during the early Vinland voyages, and seems to have continued at least occasionally for the following two or three centuries. These encounters most likely took place along the eastern coasts of the Arctic Archipelago and the adjacent treeless regions of northern Labrador, and may have been incidental to Norse expeditions in search of timber, bog-iron, or other materials unavailable in the Greenlandic environment. The Norse may have been tempted to contact Dorset groups in order to trade small amounts of metal for walrus ivory, narwhal tusks, furs, or other products of value in Greenland and Europe. However, the small amount of Norse metal recovered to date from the remains of Dorset settlements suggests that if such trade did occur, it was not of significant importance to either party.

The most extensive and enduring relationships between the Norse and aboriginal Americans appear to have been those which developed with the Inuit who immigrated to Arctic Canada, and subsequently to Greenland, during the period of Norse occupation. These were the Skraelings who were first mentioned in Icelandic records as newcomers to the Norse hunting grounds in the mid-thirteenth century, and who later are reported to have moved southwards to the vicinity of the Greenlandic Norse colonies. The archaeology of Inuit settlements confirms this general picture, although suggesting that the date of Inuit arrival in the eastern Arctic was earlier than is indicated by Norse accounts.

The first contact between Inuit and Norse may have occurred in the far north, as suggested by Norse historical records, and this event may have resulted in the concentration of Norse materials found in the thirteenth century Inuit villages of northwestern Greenland and eastern Ellesmere Island. Inuit groups may have been attracted southwards into Greenland by the opportunities to trade with the Norse inhabitants, and the most extensive relationships between the two groups must have occurred along Greenland's western coast during the fourteenth and fifteenth centuries. However, the widespread distribution of materials of Norse origin in the Inuit settlements of this period in Arctic Canada hints at another set of contacts, which may have occurred along the western coasts of Baffin Bay. Norse voyages to this region continued until at least the mid-fourteenth century, and the occasional meetings which the Norse had probably undertaken with the earlier Dorset occupants of this region may have been continued with their Inuit successors. The Inuit were accomplished sea mammal hunters, and had access to supplies of walrus ivory, walrus hides, and other materials which were extremely valuable to the Norse. Like their descendants of later centuries, they were probably willing to trade this precious material for small pieces of iron, bronze or copper, which was a scarce and necessary raw material for the cutting tools and weapons of Inuit technology.

A regular and extensive trade probably never developed between the two peoples, but it seems likely that over a period of two centuries the Norse and the Inuit of the eastern Arctic came to know one another, and took occasional opportunities to profit from a trade which would have been beneficial to both parties. The Greenlandic Norse must have known the "Skraelings" of Arctic Canada as more than a threat to landing parties, or prey for coastal attackers. The Inuit must have appreciated the benefits of dealing with the strangers who arrived in wooden ships and whom they probably knew as "qallunaat," a term which was universally applied to Europeans when they once again arrived in the Arctic. When Martin Frobisher's exploration parties visited Arctic Canada in the 1570s, probably little more than a century after the Norse colonies disappeared, the Inuit of Baffin Island appeared familiar with Europeans as either trading partners or coastal raiders (Seaver 1999)

The archaeological and historical records can do no more than hint at the nature of relationships between the Norse and the aboriginal peoples of northeastern North America. Yet these hints point in a consistent direction: toward a suggestion that over a period of several centuries these peoples knew one another, and knew of both the dangers and the benefits of meeting with strangers whose cultures had developed on opposite sides of the world.

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Chapter 9: Strands of Culture Contact: Dorset-Norse Interactions in the Canadian Eastern Arctic

Introduction

Archaeological discussions of interaction between peoples occupying the eastern Arctic in the centuries around AD 1000 have centered on contacts between Inuit and Dorset Palaeo-Eskimos, and those between Inuit and Greenlandic Norse.

In recent years, a growing body of evidence has facilitated discussion of Inuit-Norse interactions. A number of significant discoveries made in the last two decades in the Canadian Arctic suggests that relations between these two peoples involved more than hostile encounters and the looting of abandoned Norse farms by Thule Inuit searching for metal (Figure 9-1). The greatest concentration of finds are those—boat rivets, barrel pieces, part of an oak box, a carpenters' plane, chain mail, woollen cloth and smelted metal fragments—recovered from Ruin Island phase winter villages on eastern Ellesmere Island, dating to the mid-thirteenth century (Schledermann 1980). These finds are very similar to those made by Holtved (1944) at Ruin Island sites in northwestern Greenland, and may relate to the same episode of contact. Fragments of smelted iron, copper, and bronze recovered from Thule sites throughout the eastern Arctic, as well as a specimen from the Central Arctic coast which may be of Norse origin, indicate an extensive aboriginal trade network and provide evidence for the high value of Norse materials in the Inuit economy. Other discoveries include a portion of a bronze trade balance from a Thule site on the western coast of Ellesmere Island, dating to approximately the same period as the finds from eastern Ellesmere Island (Sutherland and McGhee 1983; Sutherland 1993); and a carved figurine depicting European dress, recovered from a thirteenth-fourteenth century Thule site on southern Baffin Island (Sabo and Sabo 1978). Such finds hint at more complex interactions between the Norse and the Inuit, involving direct contact and probably sporadic trade occurring along the eastern coasts of Arctic Canada (McGhee 1984; Schledermann 1993; Arneborg 1996; Gulløv 1997).

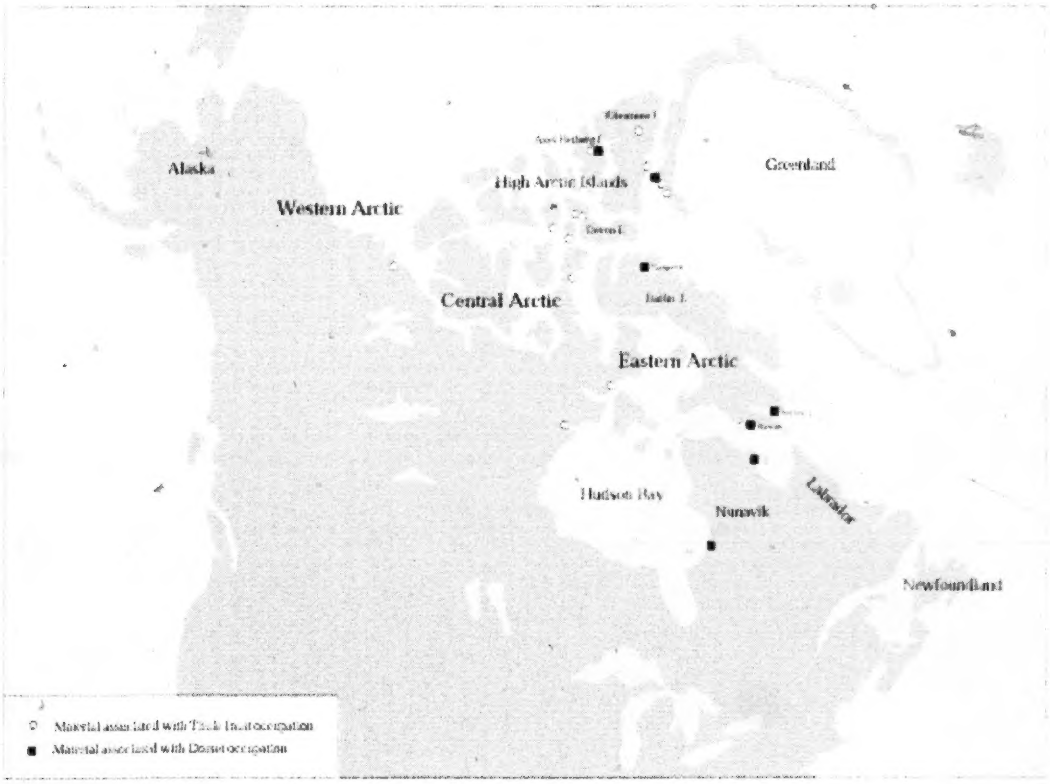
Ellesmere I.
Axel Heiberg I.
Alaska
High Arctic Islands
Greenland
Western Arctic
Devon I.
Central Arctic
Baffin I.
Eastern Arctic
Hudson Bay
Nunavik
Labrador
Newfoundland
○ Material associated with Thule Inuit occupation
■ Material associated with Dorset occupation

Figure 9-1: Locations of Norse materials associated with aboriginal sites in Arctic Canada and North Greenland.

In contrast, very few Dorset sites have produced Norse-related artifacts and consequently there has been little consideration given to the nature of the interaction between these two groups (Sutherland 2000). Discussion has also been hindered by the general belief that most areas of the eastern Arctic were abandoned by the Dorset people by the time the Norse colonies were established in the late tenth century AD. In this paper, new evidence will be presented to suggest that we are now at a stage where we might profitably investigate the nature of Dorset-Norse interaction.

Previously Known Finds

What is probably the evidence of earliest contact between the Dorset and the Norse is the small soapstone bowl, carved in a characteristically Dorset form, which was associated with the Norse remains at L'Anse aux Meadows (Ingstad 1977). The Dorset people had abandoned Newfoundland and southern Labrador several centuries before the arrival of the Norse in the region, and this lamp is most readily explained as an object which the Norse obtained from Dorset people or from an abandoned Dorset site in the eastern Arctic prior to a visit to the Newfoundland settlement. Since the Norse occupation at L'Anse aux Meadows probably occurred during the early eleventh century, relations between the two peoples may have begun by this time, and some of the accounts of Skraelings in the Vinland sagas may refer to Dorset people.

From a slightly later period, the Norse coin which was recovered from an Indian settlement site on the coast of Maine was minted between 1065-80, more than half a century later than the Vinland voyages recorded in Icelandic sagas. Also found at this site were artifacts of Ramah chert from northern Labrador, as well as two distinctive Dorset artifacts, suggesting that the penny passed from Norse to Dorset hands, before being traded southwards to Indian groups (Bourque and Cox 1981; Cox 1999).

Two specimens of smelted copper have been recovered from Dorset sites in the Nunavik region of the Eastern Arctic, one from a twelfth or thirteenth century Dorset site in Richmond Gulf on the eastern coast of Hudson Bay, and the other from a similar site on the coast of Ungava Bay (Harp 1975; Plumet 1982). These objects also probably reached the locations at which they were found through trade, with the initial contact between Norse and Dorset people having occurred along the eastern coasts of Baffin Island or Labrador, coasts which the Norse would have passed on visits to Vinland or Markland. The record of a ship having been storm-driven from Markland to Iceland in 1347 indicates that such voyages continued until at least the fourteenth century (Jones 1986:136).

Far to the north, a piece of smelted iron appears to be associated with the late Dorset occupation of the Buchanan Lake site on Axel Heiberg Island, on the extreme northwestern fringes of Dorset habitation (Laver 1983; Sutherland 1983). Together with the bronze pot fragment which has recently been recovered from a Late Dorset site in northwestern Greenland (Appelt *et al.* 1998), this find suggests that contacts occurred between the Norse and Dorset people in the High Arctic, and were associated with ventures distinct from Norse voyages to Markland. In fact, it seems possible that occasional contacts may have occurred over a period of several centuries, and over a wide area of the Baffin Bay and Davis Strait coasts from Labrador to the High Arctic (Figure 9-1).

New Evidence from Nunguvik, Northern Baffin Island

Recently, archaeological evidence bearing on the question of Dorset/Norse interaction was found in collections which are housed at the Canadian Museum of Civilization. This evidence comes from the site of Nunguvik (PgHb-1) on Navy Board Inlet, northern Baffin Island, which was excavated in the 1970s and 1980s by Father Guy Mary-Rousselière (Figure 9-1).

The most significant find from this site is a three-meter length of yarn which was excavated in 1984 by Mary-Rousselière and his Inuit assistants from one of the Dorset features at Nunguvik (Figure 9-2). A second piece of yarn, which is probably part of the same strand, was found in another section of the feature several meters distant from the first. The specimens have been identified by Penelope Walton Rogers (1999) as plied yarn spun from the fur of Arctic hare (*Lepus arcticus*). The yarn also has what are most probably goat hairs attached to it, and Walton Rogers reports that it is directly comparable to yarns used in two textiles from Gården Under Sandet, the Norse farm site in the West Settlement that was excavated from 1991-1996 by the Greenland and Danish National Museums (Walton Rogers 1998). The two Greenlandic textiles, one with yarn spun exclusively from Arctic hare fur and the other with yarns spun from goat hair and the fur of Arctic hare, were recovered from deposits, dating to the last phase of occupation at Gården Under Sandet, from the end of the thirteenth century until about AD 1350 (Østergård 1998). The importance of the Nunguvik find lies in the fact that a length of spun yarn hints at a form of contact more complex than simple trade in useful objects, such as pieces of iron, copper, and bronze. Yarn would most probably have been valued only as a curiosity by Dorset people; in addition, it is more fragile than fragments of metal and unlikely to have survived a process of long-distance trade. It therefore seems reasonable to suggest that this artifact may indicate a direct visit by a Norse ship to northern Baffin Island.

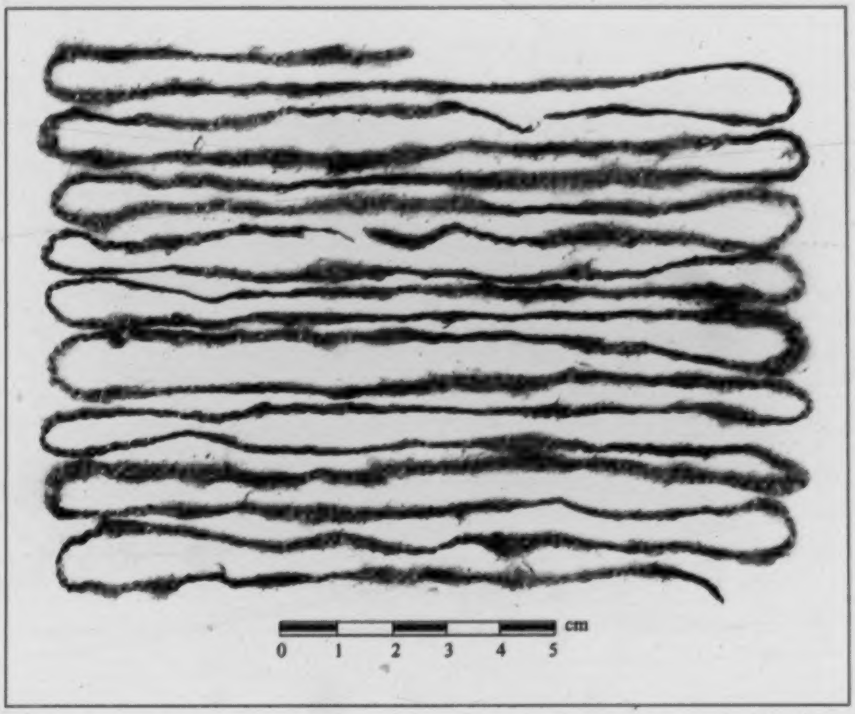

Figure 9-2: Yarn spun from fur of Arctic hare, from Nunguvik feature N73.

Other corroborating evidence from the same Dorset feature (N73) includes three pieces of wood identified as white pine (likely either *Pinus strobus* or Pinus *cembra*—according to the analyst, these cannot be distinguished by their wood anatomy), which does not usually occur in the Arctic as driftwood (Mott 1981). Two of the wood pieces contain iron-stained holes which appear to have been made by square nails, and one of these fragments has been radiocarbon dated to the late thirteenth or early fourteenth century (S-1615: 670±50 BP, calibrated 1 sd range AD 1286-1387, 2 sd range AD 1271-

1399) (Mary-Rousselière 1991), the same period that produced the textiles woven with Arctic hare fur and goat hair in Norse Greenland (Figure 9-3a).

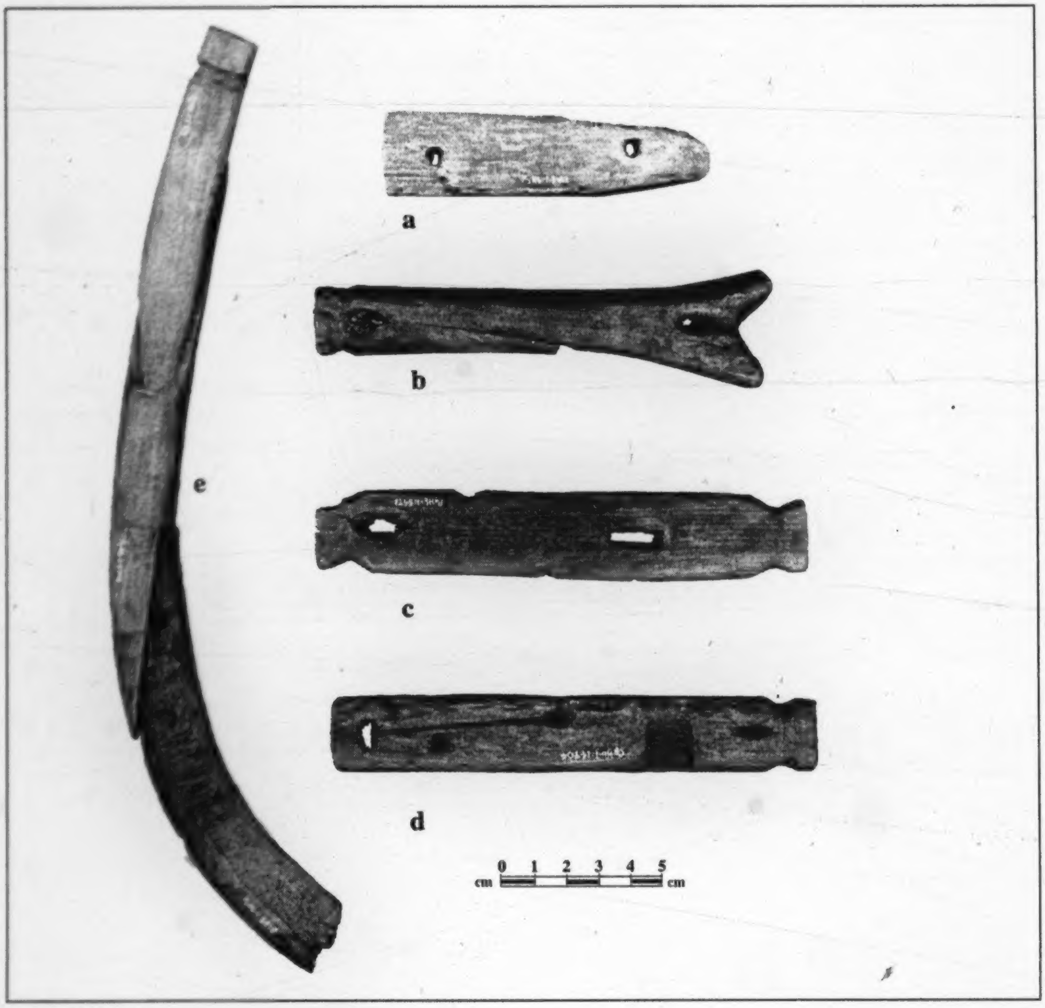

Figure 9-3: Unusual wooden artifacts from Nunguvik feature N73 : *a*) portion of pine object containing two square nail holes, *b)* handle-like wooden object with precise scarf, *c)* wooden object with rectangular mortice hole, *d)* handle-like wooden object with rectangular groove, *e)* wooden object precisely scarfed from three pieces.

Additional artifacts in the Nunguvik collection are less definitive, but may also relate to Norse contact. The assemblage from Nunguvik has always been considered unusual in the amount and variety of well preserved wooden artifacts and artifact fragments. The distinctiveness of the woodworking has generally been interpreted as simply the result of the excellent preservation conditions at the site, or perhaps exceptional access to supplies of driftwood by the local Dorset people. A closer examination of this material suggests that other factors may be at play, since much of the worked wood from Nunguvik feature N73 is outside the range of technique and style known from most other Dorset culture assemblages. These techniques include sawing, precise scarfing, the use of nails and of mortice and tenon joints, all procedures which are not characteristic of described Palaeo-Eskimo woodworking (cf. Grønnow 1994) but which do appear to resemble medieval European techniques (Figure 9-3 b,c,d,e). Given this similarity, it seems possible to suggest that the large amount of worked wood at this site may not be the result of exceptional access to driftwood, but to wood which reached the area by other means of transport.

The potential significance of the yarn, the dated pine, and the other unusual worked wood from Nunguvik is dependent upon the archaeological context from which it was recovered (Figure 9-4). Nunguvik is situated on the west coast of Navy Board Inlet about 100 km west of the community of Pond Inlet. The site is comprised of about 80 houses belonging to Early, Middle, and Late Dorset, as well as to Thule occupations (Mary-Rousselière 1976, 1991). Only a few of the houses have been excavated. The Dorset feature N73 is located at one edge of the site, close to the shoreline and only one or two metres above sea level. While Thule artifacts are scattered over the surface of

Figure 9-4: The site of Nunguvik, looking northwards towards the coast. Photo: Susan Rowley.

the site of Nunguvik, there is no evidence of Thule re-use of N73. Mary-Rousselière commented on the discreteness of Dorset and Thule features at the site, and the closest Thule occupation to N73 lies on a higher terrace approximately 100 meters away. An examination of the remainder of the Nunguvik collection, excavated from other Dorset as well as Thule features, indicates that most of the unusual materials recovered from the site come from feature N73. It is a large stratified feature, comprising what appears to be a Late Dorset occupation which is intrusive into Middle Dorset deposits (Figure 9-5). Interpretation of the feature is complicated by the incomplete state of the field notes and maps, much of this material having perished in the fire that claimed Father Mary-Rousselière's life and destroyed the Catholic mission in Pond Inlet in 1994. The yarn and the other unusual material appear to be associated with a midpassage feature, and occur in deeply buried stratigraphic units that contain Middle Dorset material, but also Late

Dorset harpoon heads and a significant number of carvings typical of Late Dorset, albeit of a distinctly local style.

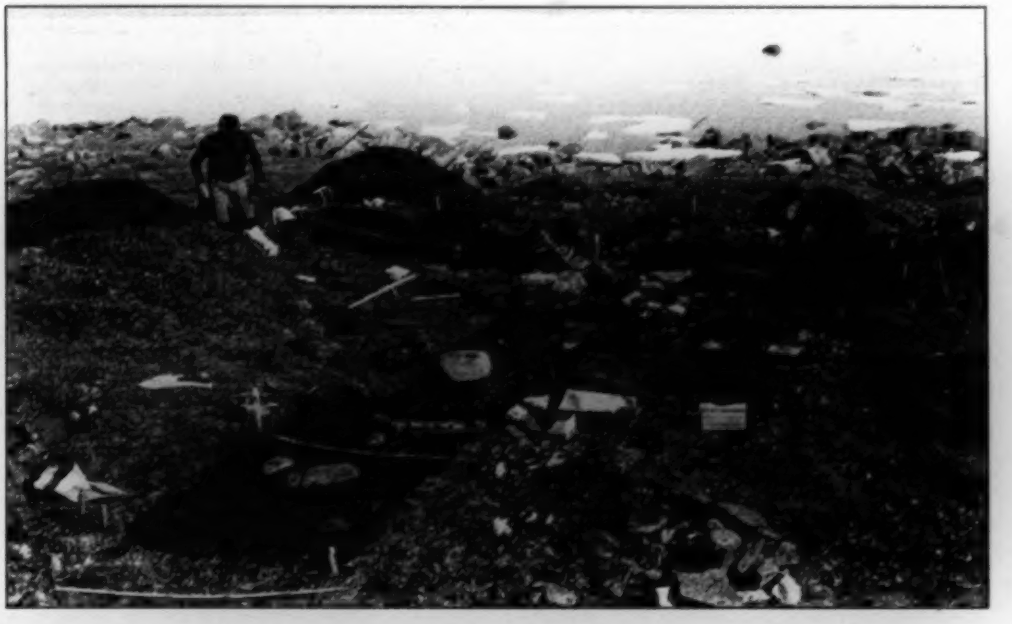

Figure 9-5: Nunguvik feature N73 during excavation. The yarn and unusual worked wood is from a buried layer associated with the boulder feature near the centre of the excavation. Photo: Susan Rowley.

A perplexing element of feature N73 has been the radiocarbon dates. Seven of the dates which Mary-Rousselière obtained from the complex cluster are in the sixth to eighth centuries A.D., several centuries earlier than what would be expected for a Late Dorset occupation, particularly one with associated Norse material. AMS dates were run on both pieces of yarn and on a piece of worked caribou antler which was found in close proximity to the three-meter strand. All three samples returned dates in the seventh and eighth centuries AD (Beta-135000: 1320 ±40 BP on antler, calibrated 1 sd range AD 663-762; 2 sd range AD 654-774); (Beta 134999: 1400 ±40 BP on the strand associated with the antler, calibrated 1 sd range AD 616-665, 2 sd range AD 567-689); and (Beta-

139756: 1290 ±40 BP on the smaller piece of yarn, calibrated 1 sd range AD 682-770; 2sd range AD 656-858). Results on the three samples are within the range of the cluster of seven dates previously recovered from the feature. The date on the worked piece of white pine is evidence in support of a medieval component of the feature, and is in accord with the similarity of the yarn to that in Norse textiles of the late thirteenth/early fourteenth centuries. The discrepancy between this evidence and the early radiometric measurements on the yarn is a significant problem which needs to be addressed in future research.

Dorset Wands and Other European-like Face Images

Other archaeological specimens which might bear closer examination in light of the findings from Nunguvik are the Late Dorset carvings with occasional representations of European-like faces. These images have long been noted, but their interpretations as evidence of contact have generally been discarded as based on judgements which are only subjective. Batons or wands displaying a wide range of images are found on late Dorset sites throughout the eastern Arctic. On a number of these specimens, a distinctive long and narrow face with a prominent straight nose and occasional hints of a beard appear (Figure 9-6 a,b). It is interesting to note that several of these images were found in N73 at Nunguvik (Figure 9-6 c,d). Perhaps it is time to re-evaluate the significance of the wands and other Late Dorset specimens where these types of images occur.

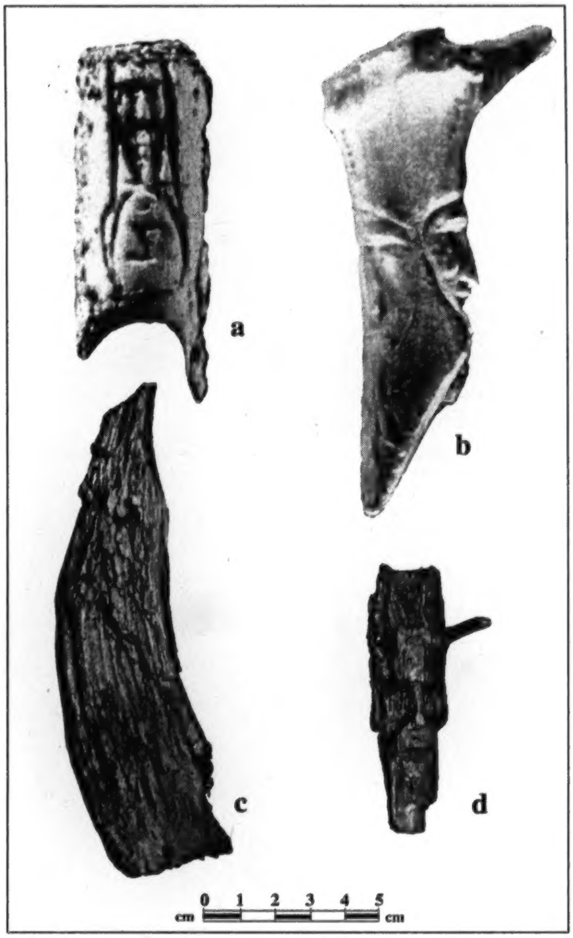

Figure 9-6: Dorset representations of European-like faces:*a)* antler wand from TaJa-1, the Battery site, Axel Heiberg Island, showing a narrow and possibly bearded face (upright) opposed to a more typical Dorset depiction of a human face, *b)* antler wand from QiLd-1, the Brooman Point site, Bathurst Island, showing a long-nosed face in right profile, *c)* wooden carving from Nunguvik N73, northern Baffin Island, showing a long-nosed face with prominent eyebrows in left profile, *d)* wooden carving from Nunguvik N73, northern Baffin Island, showing a long-nosed face; the apparent "horns" are twigs which are part of the original piece of wood.

Late Dorset in the Eastern High Arctic

What is the probability that more extensive contact occurred between Norse and Dorset peoples than has been indicated by the evidence currently available? If one accepts the argument proposed by Park (1993) regarding the disappearance of Dorset occupation by the tenth century A.D., no opportunity for contact between the Dorset and the Greenlandic Norse would have been possible. However, a growing number of radiocarbon dates associated with Late Dorset components in the High Arctic (Figure 9-7a) suggests the continuance of Dorset occupation into the mediaeval period. If only one of these dates is accepted as being correct, it provides evidence of a significant temporal opportunity for contact with the Greenlandic Norse. It is also interesting to compare this range of dates with those from Thule culture in the same area (Figure 9-7b). These distributions show essentially the same overlapping range of dates, and suggest that both populations had roughly the same degree of opportunity for meetings with early European occupants of Greenland.

In order to provide a general estimate of the extent of our knowledge of Late Dorset culture in the High Arctic, the results of a 800 km survey undertaken several years ago along the southern coast of Devon Island have been examined (Sutherland 1991). On the basis of extrapolation from the number of sites and features discovered during this survey, we can estimate that there may be on the order of 2000 Late Dorset occupation features in High Arctic Canada. Less than 20 of these features have currently been excavated, so that our excavated sample is most likely smaller than 1% of the total number of features occupied during the centuries when the Dorset and Norse people may have been in contact. On the basis of a sample of this size, the fact that we have recovered Norse material from three structures in the High Arctic suggests that contact may have occurred more frequently than we have previously suspected.

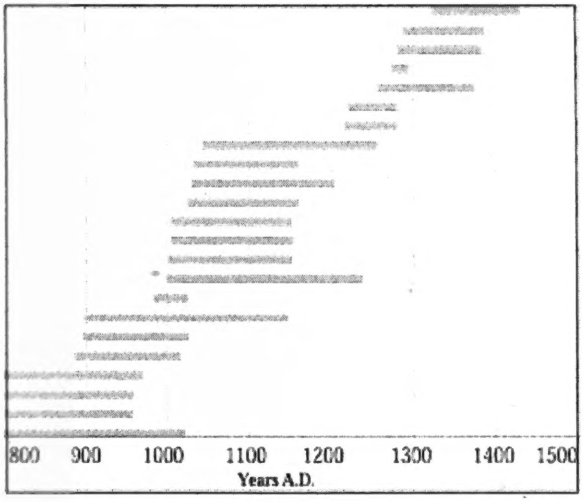

Figure 9-7a: Radiocarbon dates on High Arctic Late Dorset components: 1σ ranges of calibrated dates.

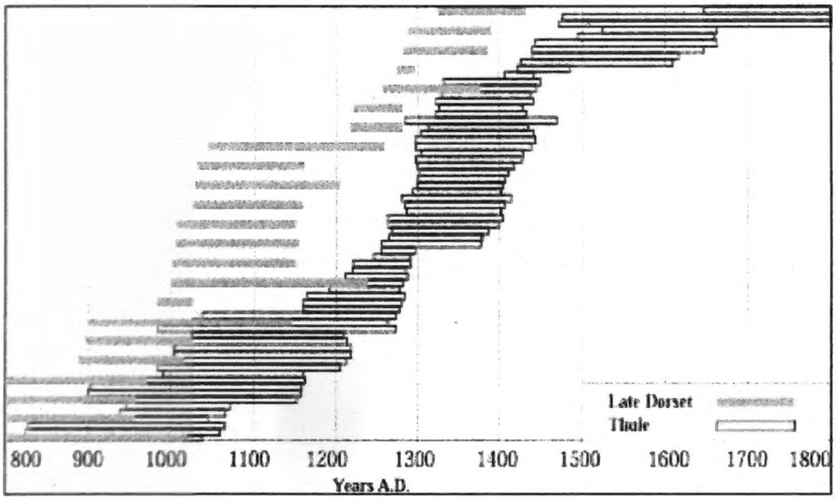

Figure 9-7b: Radiocarbon dates on High Arctic Thule and Late Dorset components: 1σ ranges of calibrated dates.

Conclusions

The strands of yarn and the wood recognized in the collections from Nunguvik, as well as smelted metal recently recovered from Late Dorset sites in other regions, has led to the consideration of new possibilities regarding the nature of relations between the Dorset people and the Norse. The yarn also provides evidence supporting the view that Dorset people survived in the High Arctic for some time after the arrival of the Norse in Greenland, and the similarity of the Nunguvik yarn to that used in late thirteenth/early fourteenth century textiles from Gården Under Sandet suggests Dorset survival into the fourteenth century.

What do the new finds tell us about the nature of Dorset-Norse contact? For the reasons argued previously, it is suggested that the strands of yarn from Nunguvik may be more indicative of direct contact on Baffin Island than long distance trade from a more geographically removed episode of contact. If such contact did occur in this local region, did it perhaps have more influence on local Dorset culture than we have perceived in the better-documented cases of Norse-Inuit contact? The answer to this question may lie in the unusual assemblage of wooden artifacts from feature N73. If this material does prove to resemble Norse workmanship as much as, or more than, it does Dorset workmanship, we may have to begin thinking in much different terms regarding the nature of Norse contact and influence on the aboriginal occupants of the High Arctic.

Addendum

While preparing the final copy of this paper, further evidence was found in the Canadian Museum of Civilization's collections from two sites on southern Baffin Island, over 1000 kilometers from Nunguvik (Figure 9-1). Yarn or string, supposedly twisted from muskox wool, had been reported from the Nanook site (KdDq-9) and the nearby Tanfield site (KdDq-7) located close to Kimmirut (formerly Lake Harbour) on the southern coast of Baffin Island (Maxwell 1973). Samples of the yarn from Nanook were recently identified as being spun from Arctic hare fur, and plied like the yarn from Nunguvik (Walton Rogers 2000) (Figure 9-8c). The collections from Nanook and Tanfield also include unusual wooden artifacts (Figure 9-8a) and a considerable amount of wood debris which, interestingly, Maxwell described as of good quality and suggesting that "the wood may have been imported from the south rather than collected through the vagaries of wind and current" (1973: 228). Examination of the wood assemblage shows that it bears a close similarity to that from Nunguvik. One of the wooden fragments recently re-examined in the collection from Nanook (Figure 9-8b) has a cut geometric design on one surface which is not typical of Dorset, but which does resemble decoration on Norse artifacts (see Norlund and Stenberger 1934: Figure 101(c) and Roussell 1936: Figure 103(1)). While the Nanook site was assigned to a Middle Dorset period on the basis of stylistic comparisons and numerous radiocarbon dates (Maxwell 1973, 1976), a single radiocarbon date on willow twigs yielded an assay of 580 ±80 BP (GAK-1288: calibrated 1 sd range AD 1306-1414, 2 sd range AD 1279-1451). The material on which the date was obtained appears to derive from a locality and depth which place it in relatively close association with the yarn, and the age is similar to the date on the worked pine sample from Nunguvik N73.

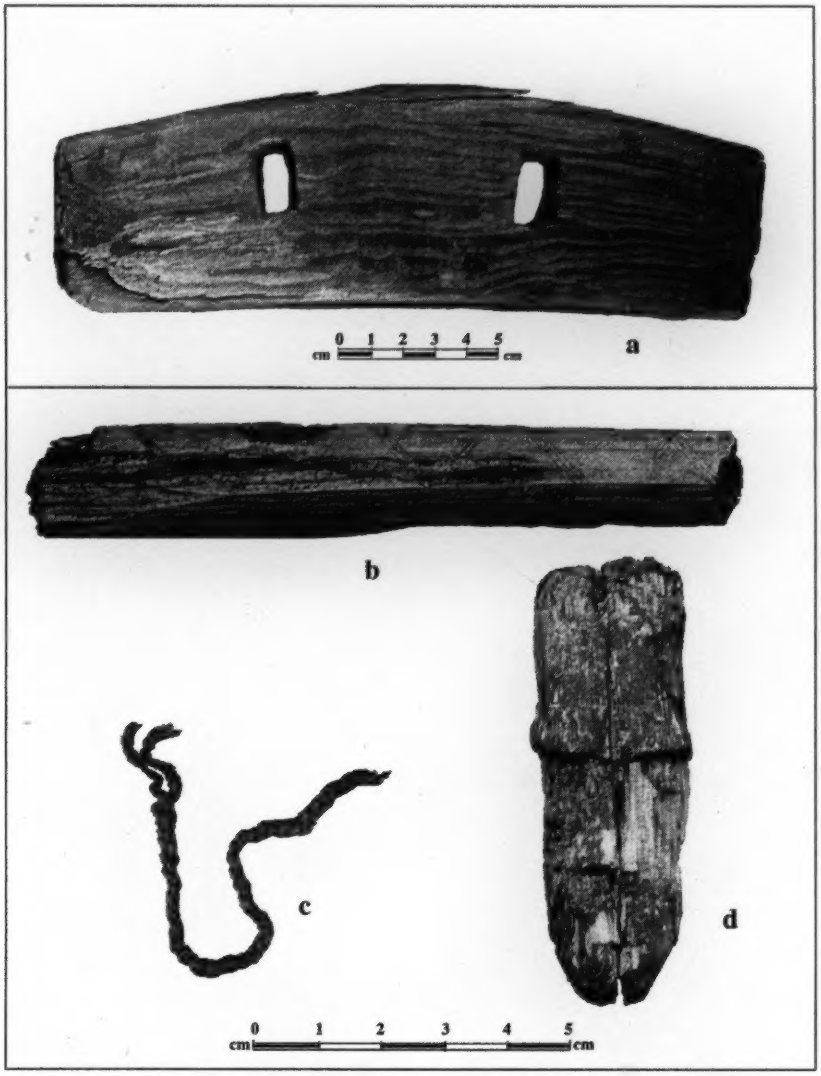

Figure 9-8: Yarn and wooden artifacts from the Nanook site (KdDq-9), southern Baffin Island: *a)* flat plank with rectangular mortice holes, *b)* portion of a wooden artifact with cut geometrical design on upper face, *c)* yarn spun from fur of Arctic hare, *d)* maskette depicting a narrow long-nosed face with prominent eyebrows and what may be headgear; the nose and mouth area are damaged.

In addition to the yarn and the unusual worked wood, the Nanook site produced a small wooden maskette (Figure 9-8d), from which most of the nose is missing due to damage. Although the specimen is in a Dorset style, it depicts a long and possibly bearded face distinguished by straight and very pronounced eyebrows, and what may be headgear similar to that shown in other depictions of individuals who appear to be Norse (Gulløv 1983).

Yarn was also reported from an undated stratum at the Willows Island 4 site (KeDe-14) in Frobisher Bay, southeastern Baffin Island (Figure 9-1), excavated by Daniel Odess in 1992 and 1993 (Odess 1996, 1998). This has been recently identified as spun and plied yarn from Arctic hare fur (Walton Rogers 2000). Willows Island 4 also contains a large sample of worked wood which is outside the general range of style and technique known from other Dorset assemblages, but similar to that from Nunguvik and Nanook. The site is assigned to an Early/Middle Dorset period on the basis of artifact styles and radiocarbon dates (Odess 1998).

Supposed muskox wool cordage has been reported from a fourth assemblage, from the Avayalik Island 1 site (JaDb-10) in northern Labrador which was excavated by Richard Jordan in 1978 (Jordan 1980). The Avayalik Island 1 site comprises both Middle and Late Dorset components, the latter dated by one radiocarbon measurement of 670 ±60 BP (SI-3864: calibrated 1 sd range AD 1284-1390, 2 sd range 1255-1408) on conifer wood. The cordage is associated with the Middle Dorset component, as is a large and unusual worked wood assemblage. Plans for examining this material are currently underway.

The interpretation that the yarn and unusual wood assemblages from these sites is related to contact with Norse Greenlanders is at apparent variance with the assessed ages of the associated Dorset culture assemblages. The material from Nanook and Tanfield, Willows Island 4, and possibly that from Avayalik Island 1, as well as Nunguvik, are all associated with Dorset culture assemblages which have been assigned by their excavators to Early or Middle Dorset periods. If one accepts the mid-first millennium AD age assignment of the yarn from Nunguvik and the age assignments on the relevant components of the other Baffin Island sites, and if one believes that spinning was not an indigenous technique that was used in Arctic North America, then one must consider the possibility, remote as it may seem, that these finds may represent evidence of contact with Europeans prior to the Norse arrival in Greenland. Currently, the most reasonable interpretation would be to assume that problems exist with radiocarbon dating and artifact provenience, and that the European association of this material relates to mediaeval Norse Greenland. Hopefully, new archaeological research and a closer examination of the problems involved with Arctic radiocarbon dates and their usage (cf. Park 1993, McGhee 2000) will provide us with an answer to the current discrepancies in interpretation.

In view of these recent discoveries, the conclusions presented in this paper should be amended to suggest that contact between the Dorset people and the Norse (or possibly some other earlier visitors) may have occurred over a broad region of the Eastern Arctic coasts, and this contact may have been more complex and intensive than has previously been considered.

Acknowledgements

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Chapter 10: The Graham Tradition as Represented at Three Sites on Graham Island: Blue Jackets Creek, Honna River and Tow Hill

Introduction

The outline of a cultural sequence for the pre-contact period of occupation of Haida Gwaii was first defined on the basis of archaeological excavations conducted in the late 1960s and early 1970s (Fladmark 1970, 1975, 1989; Severs 1974a). Fladmark's (1975: 238-9) initial scheme divided the sequence into two long-lasting cultural traditions. The Moresby Tradition existed between approximately 8000 and 5000 BP, and was characterized by small campsites lacking shellfish midden accumulations, and by a stone tool industry including pebble cores, flakes, and microblades. The subsequent Graham Tradition began about 4000 years ago and continued until European contact; it was marked by the development of shell midden deposits and an increasingly complex array of technology, leading directly to the development of historic Haida culture. Bridging the two traditions was the Transitional Complex, originally viewed as existing during a relatively short period of time during which the heavy stone tools of the Moresby Tradition continued in use, while microblades were replaced by a bipolar flaking industry and some items of Graham Tradition technology began to appear.

This paper identifies the significant characteristics of the Graham Tradition as it is represented at the site of Blue Jackets Creek (FlUa-4), which was occupied between approximately 5000 and 2000 years ago, as well as at two other sites dating from the same period (Figure 10-1). On the basis of this material, the paper suggests that the Graham Tradition can be usefully redefined as a more technologically inclusive but temporally limited classificatory unit. It is also argued that the assumption of continuity between the Graham Tradition as seen in this material, and Haida culture as it is known from the Historic period, is not yet warranted.

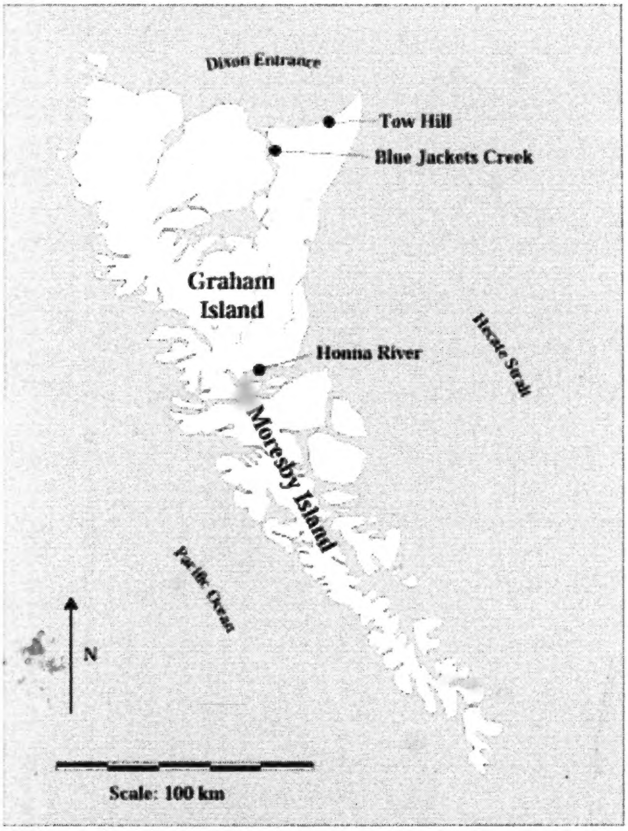
Dixon Entrance
Tow Hill
Blue Jackets Creek
Graham Island
Honna River
Hecate Strait
Moresby Island
Pacific Ocean
N
Scale: 100 km

Figure 10-1: The Queen Charlotte Islands, showing locations of the three Graham Tradition sites discussed.

Blue Jackets Creek

The site of Blue Jackets Creek (FlUa-4) lies above the eastern shore of Masset Sound, on the northern side of the creek for which the site is named, and was first tested by Fladmark in 1969. The site is located 2.4 kilometres south of the town of Masset, approximately 70 to 100 metres inland from the present coast and between 10 and 12 metres above mean high tide level. Much of the seaward portion of the site was destroyed during the 1971 construction of the highway from Masset to Port Clements, which left a road-cut face of approximately 28 metres through midden deposits (Figures 10- 2, 3). The remaining midden is approximately one hectare in size, and much of the upper levels have been disturbed or removed by an earlier road which was constructed at some time around 1917. This portion of the site has a vegetation cover of alder, salmonberry and grasses, setting it apart from the surrounding forest of hemlock and Sitka spruce.

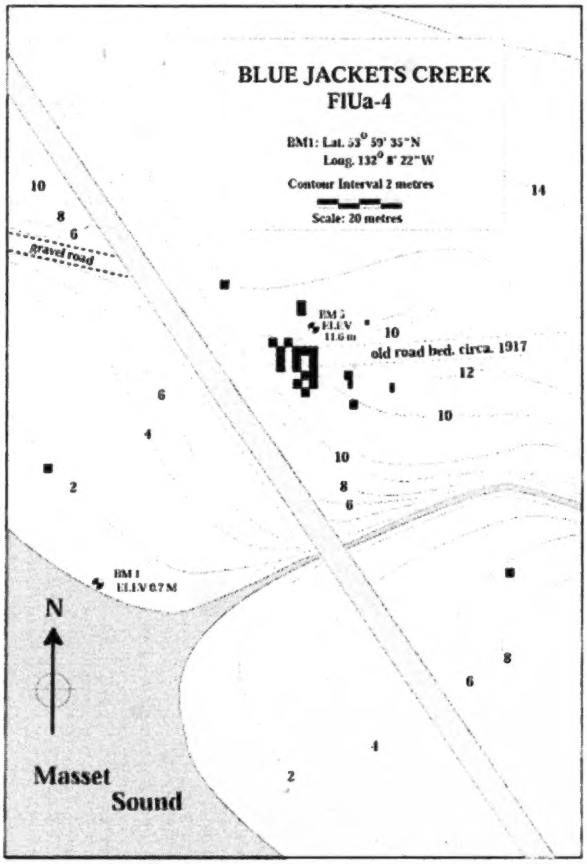
BLUE JACKETS CREEK
FlUa-4
BM1: Lat. 53° 59' 35" N
Long. 132° 8' 22" W
Contour Interval 2 metres
Scale: 20 metres
10
8
6
gravel road
14
BM 3
ELEV
11.6 m
10
old road bed. circa. 1917
12
6
4
10
2
10
8
6
BM 1
ELEV 0.7 M
N
8
6
4
2
Masset
Sound

Figure 10-2: Map of the Blue Jackets Creek site.

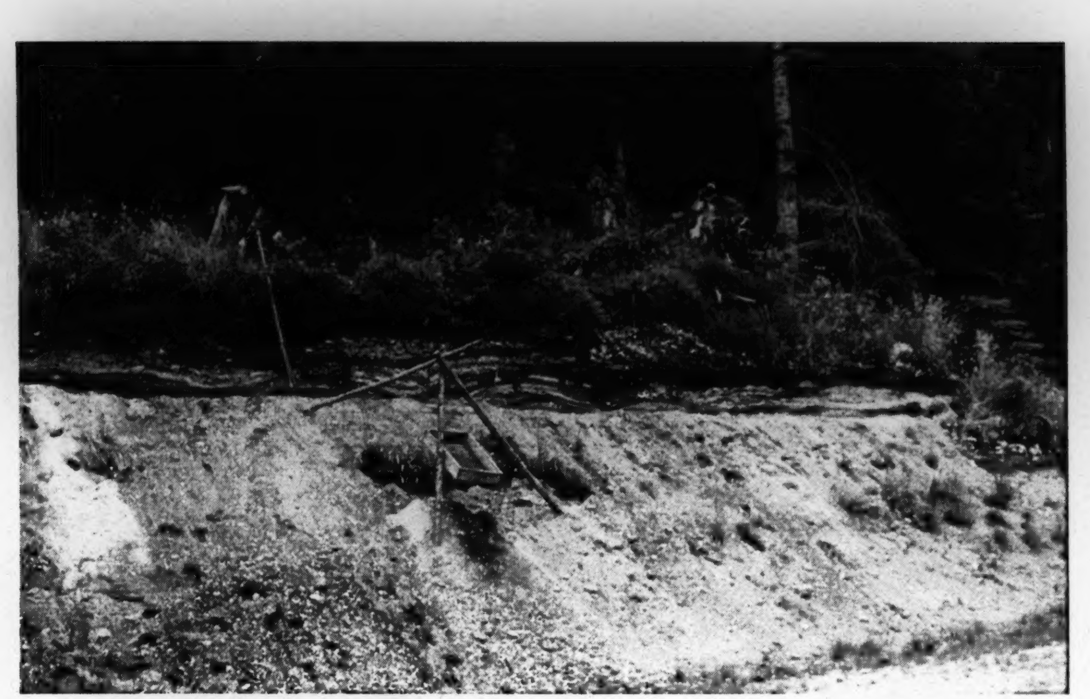

Figure 10-3: The roadcut through the midden at the Blue Jackets Creek site.

Excavations were undertaken during the summers of 1972 and 1973, with an aim of salvaging information from the remaining portions of the site (Severs 1974a). Test pits were dug to determine the limits of the site, and excavation was concentrated in a central zone measuring approximately 30 metres by 10 metres which appeared to contain the deepest and richest deposits. The edge of the slumping roadcut was cleared, and trenches perpendicular to this face were excavated in hopes that transects of the deepest and most varied stratigraphy would provide a clear picture of the nature of the cultural deposits. Further units were then opened in order to follow and elucidate interesting aspects of the stratigraphy. Twenty square metres were excavated in 1972, in deposits which extended to a depth of up to 270 cm below surface (Figure 10-4). The following year, a further 72 square metres were opened in the central area of the site.

Nature of the Deposits: The base of the Blue Jackets Creek midden lies on wave-bedded beach sands which slope slightly downward toward the present shore. The stratigraphy of the cultural deposits is uniformly complex, with minimal continuity across the area of the site tested by excavation. Localized lenses of mixed shell, varying greatly in thickness and degree of crushing, occur throughout the deposits. Homogeneous pockets of sea urchin and blue mussel shells occur frequently in the lower portion of the site. The upper portion of the deposits, approximately 20% of the total depth, is more heavily leached and consists primarily of sandy loam containing artifacts, charcoal, and concentrations of fire-cracked rock. Over one hundred features were recorded, including burial pits, hearths, small post holes, and thin layers of black greasy loam which are probably the remnants of living floors. These cultural features have a relatively homogeneous but apparently unpatterned distribution throughout the depth of the deposits and across the area tested.

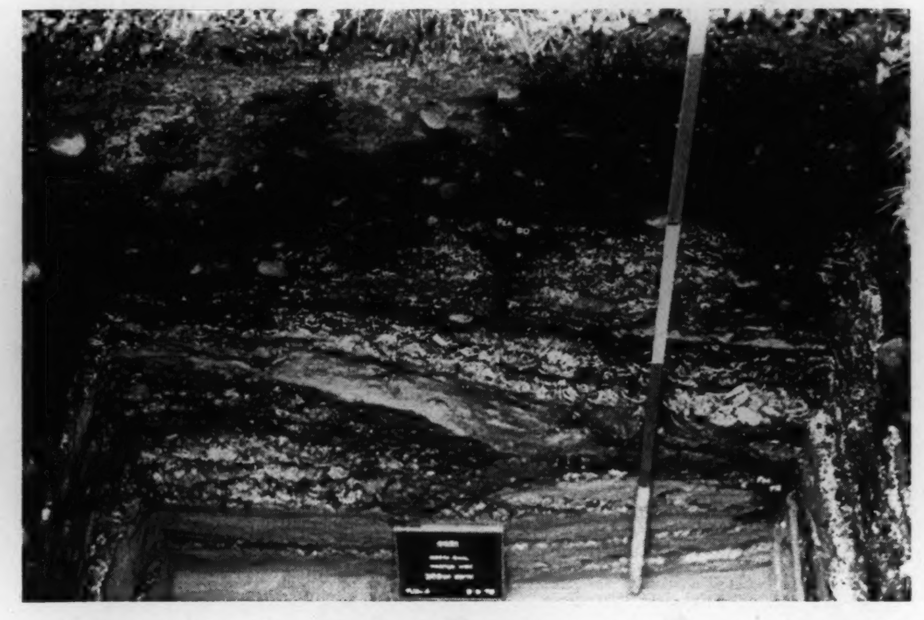

Figure 10-4: Profile of midden deposits at Blue Jackets Creek (north wall, sq S3-E1).

Laboratory Number	Material	Level	Radiocarbon Years BP	2σ Calibrated Range, Years BC
GaK-4883	charcoal	4	2270 ± 85	61-756
GaK-4884	charcoal	11	3750 ± 145	1752-2567
S-935	charcoal	7	3815 ± 115	1924-2572
S-936	charcoal	11	4150 ± 90	2475-2904
S-676	charcoal	7	4160 ± 120	2353-3081
S-2776	charcoal	4	4160 ± 140	2503-3255
GSC-1554	charcoal	9	4290 ± 130	2503-3341
GaK-5093	charcoal	14	5260 ± 440	2925-5056
S-2338	human bone	6	4100 ± 170	1522-2427*
S-2349	human bone	8	4675 ± 145	2293-3168*
S-2351	human bone	9	5005 ± 150	2785-3606*
S-2352	human bone	6	5055 ± 155	2873-3623*

Table 10-1: Radiocarbon dates from Blue Jackets Creek. Calibration follows Stuiver *et al.* (2003); *calibration of human bone assumes an 80% marine diet, and a local ΔR factor of 300±50 years.

Dating of the Site: Given the nature of the deposits, excavations were carried out in arbitrary 20 cm levels. For present purposes, the artifacts recovered from excavation are grouped by level, a scheme which provides a framework within which the broad outlines of temporal development at the site may be discussed. Twelve radiocarbon dates and two obsidian hydration measurements have been determined from the material excavated. Eight of the radiocarbon dates are on samples of wood charcoal associated with non-burial cultural features. The earliest is 5260 ± 440, on charcoal from what may be a non-cultural deposit directly overlying basal sterile sands in Level 14; this date suggests that the midden deposits at the site began to accumulate at some time after about 5000 years ago. Six samples are associated with features between Level 11 and the base of Level 4, and all produced normalized but uncalibrated dates ranging between approximately 4500 and 3500 radiocarbon years ago (Table 10-1). One sample from Level 4 yielded a date of

2270 ± 85, which is supported by two obsidian hydration measurements yielding ages of approximately 2000 years, from the upper cultural layers of the midden deposits.

Four radiocarbon dates were run on samples of human bone from burials recovered in the middle levels (6 to 9) of the site. These dates have a somewhat older distribution than those on wood charcoal from the midden deposits, with normalized but uncalibrated ages ranging between approximately 3700 and 5400 years. The age difference can probably be accounted for by a marine reservoir effect on the apparent ages of these bones, as δC^{13} measurements ranging between –14.1 and –17.9 indicate that a large proportion of the food eaten by these individuals came from marine sources. In an attempt to assess this situation, the dates were calibrated using the marine reservoir correction presented by Stuiver *et al.* (2003). This exercise required making two assumptions: first, it was estimated that 80% of the diet of the people represented in the burials was derived from marine sources; second, by interpolation from measurements in southwestern Alaska to the north, and the Puget Sound-Strait of Georgia area to the south, it was estimated that the local marine reservoir has a ΔR factor of 300±50 years. The resulting calibrated dates on burials range between approximately 1500 and 3500 BC, which is in the same range as the majority of calibrated dates derived from non-burial deposits, suggesting that the burials were indeed contemporaneous with the accumulation of midden deposits. The assumptions underlying this exercise appear to be plausible but are not certain, and therefore the use of conventional radiocarbon years for reporting the age of the site is probably prudent. The uncalibrated dates suggest that the main deposition of the Blue Jackets midden probably began at some time between 4500 and 4000 radiocarbon years ago, and that the site continued to be occupied for approximately 2000 years. Aside from stray finds of recent materials incorporated into the uppermost level, no indication of occupation for the past 2000 years is apparent.

Artifactual Evidence: Approximately 2500 specimens were recovered from the site. The distribution of these artifacts, grouped by formal and functional classes, is listed in Table 10-2. Most numerous are artifacts formed by percussion flaking from cobbles of siltstone, sandstone, and other coarse-grained rocks: cortical spalls, flakes, remnant cores, and pebble or core tools (Figure 10-5 a,b). Some flakes and cortical spalls have been reworked unifacially, while others show edge-damage from use. These artifacts were probably expedient tools made from locally available material, and used for a variety of cutting, chopping and scraping functions. Less numerous are small artifacts made from cryptocrystalline stone, primarily a white to yellow agate but less frequently of chalcedony, jasper, or chert. These are primarily formed from small water-worn cobbles which are struck bipolarly to produce spalls, flakes, and thin rectangular core remnants or pieces esquillées. Several of the flakes show minimal retouch, and one has been retouched unifacially to form a small circular scraper similar to those made from basalt.

A distinctive stone industry is based on pebbles or small cobbles of fine-grained black basalt. The primary product of the industry were flakes, many of which are unifacially retouched on one or more edges. A number of flakes have been modified in a consistent manner by steep unifacial flaking adjacent to the thickest portion of the flake (Figure 10-5 c,d). The resulting unifacial scrapers are often approximately circular in outline, and a few of the smaller and more finely formed specimens appear to have been

ARTIFACT CLASS	1	2	3	4	5	6	7	8	9	10	11	12	13	Burial	Surface	Total
Basalt biface	1															1
Basalt scrapers	3	5	4	3	4	6	4	3	1	3				3	12	51
Basalt cores, flakes	32	27	30	58	18	25	15	18	13	23	6		1	13	77	356
Flaked obsidian			1											2	2	5
Celts / Adzes & fragments	2	1	2	4	5	6	2	6	2	2				1	2	35
Celt / Adze preforms	5	5	11	11	9	17	9	13	10	15	2			1	21	129
Ground slate artifacts			1	1	2	2	1	1								8
Ground stone clubs			1	1	1											3
Other complex stone artifacts				2	1										1	4
Jet medial labret		1														1
Coarse stone cores, flakes	34	27	60	73	61	64	71	94	101	161	5	3	0	16	197	967
Cortical spalls	13	19	7	12	20	24	19	13	18	8				3	50	206
Pebble tools	4	8	5	8	8	5	3	2	2	2					55	102
Misc. coarse stone tools	7	10	6	15	16	10	2	5	4	3				3	16	97
Cryptocrystalline flakes, cores	19	18	28	27	7	17	18	13	13	5	2			9	41	217
Abrasive stones	3	5	5	6	7	8	5	5	6	8		1		5	15	79
Worked pumice							1		2	1						4
Pigment stone														1		1
Harpoon heads and valves				5	2		2							1	1	11
Barbed bone/antler points			1	9	3	4	1	3	1	1				1	1	25
Fish hook and shanks							2		2	1						5
Bone/antler awls			1		1	1	2			1					1	7
Other bone/antler tools	1	2	1	9	11	9	7	5	6	4	1			1	3	60
Bone combs			1			1			1							3
Carved metapodials														2		2
Worked bone/antler	1	3	10	15	11	16	13	13	13	11				9	2	117
Porcupine incisor tool					1											1
Set of sea otter tooth beads														1		1
Worked Mytilus shell				3	1			1								5
Set of shell disc beads														1		1
Total per Level:	125	131	175	262	189	215	177	195	195	249	16	4	1	73	496	2504

Table 10-2: Distribution of artifacts in Blue Jackets Creek site (FlUa-4).

designed for use in hafts. Although basalt flakes and cores occur throughout the deposits, they and the formed basalt scrapers are more heavily represented in the middle to upper levels, and the single biface was recovered from Level 1.

Another notable class of stone artifacts is that of small pecked and ground celts or adzes, made from a variety of fine-grained rocks which were probably derived from local cobbles (Figure 10-5 e,f). Ranging between approximately 65 and 100 mm in length, these small adzes or celts have sharp and slightly convex bits, expanding symmetrically to an oval cross-section which then tapers to a rounded poll.

Fine-grained abrasive stones occur in a variety of rod, bar and tabular forms, while coarse-grained sandstone abraders are found in thin tabular forms as well as in larger slabs which have been heavily worn. Miscellaneous stone tools include hammerstones, paintstones or cobbles stained with ochre (usually associated with burials), a variety of crudely formed objects which cannot be classed by function, and two cobbles encircled by thin pecked grooves which were probably used as netsinkers. Several ground slate artifacts and artifact fragments were found, the only identifiable form being thin triangular points with sharp lateral edges (Figure 10-5 g). A few complex pecked and ground stone tools, including a portion of a stone club with incised zoomorphic design (Figure 10-5 i), and several decorated objects of uncertain use, were recovered. A polished jet medial labret (Figure 10-5 h) was found in the uppermost portion of the site.

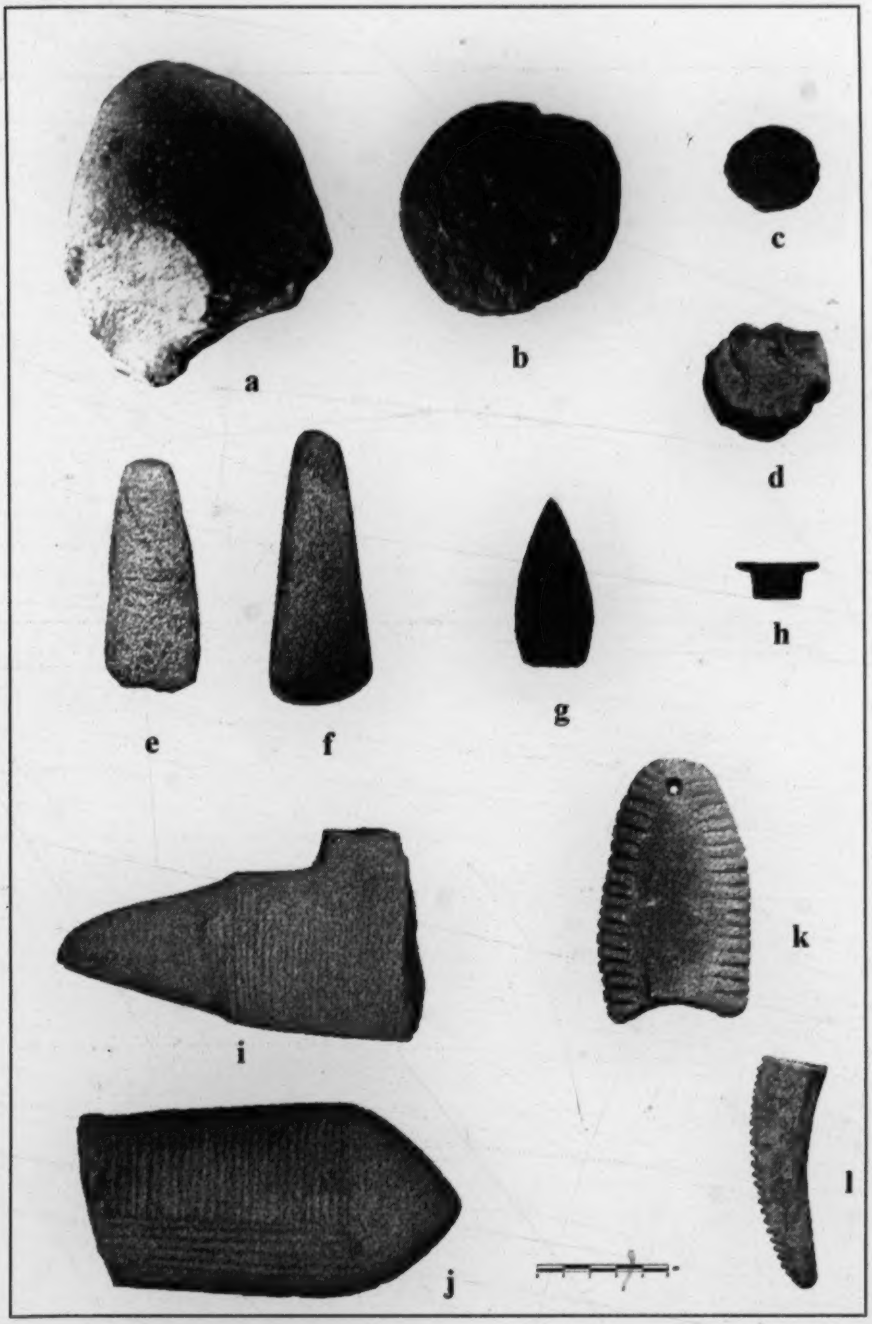

Figure 10-5: Stone artifacts from Blue Jackets Creek. *a)* cobble tool; *b)* cortical spall tool; *c, d)* unifacial basalt scrapers; *e)* adze preform; *f)* adze; *g)* ground slate point; *h)* jet labret; *i)* zoomorphic club fragment; *j)* club fragment; *k)* perforated ribbed stone; *l)* ground stone object with serrated edge.

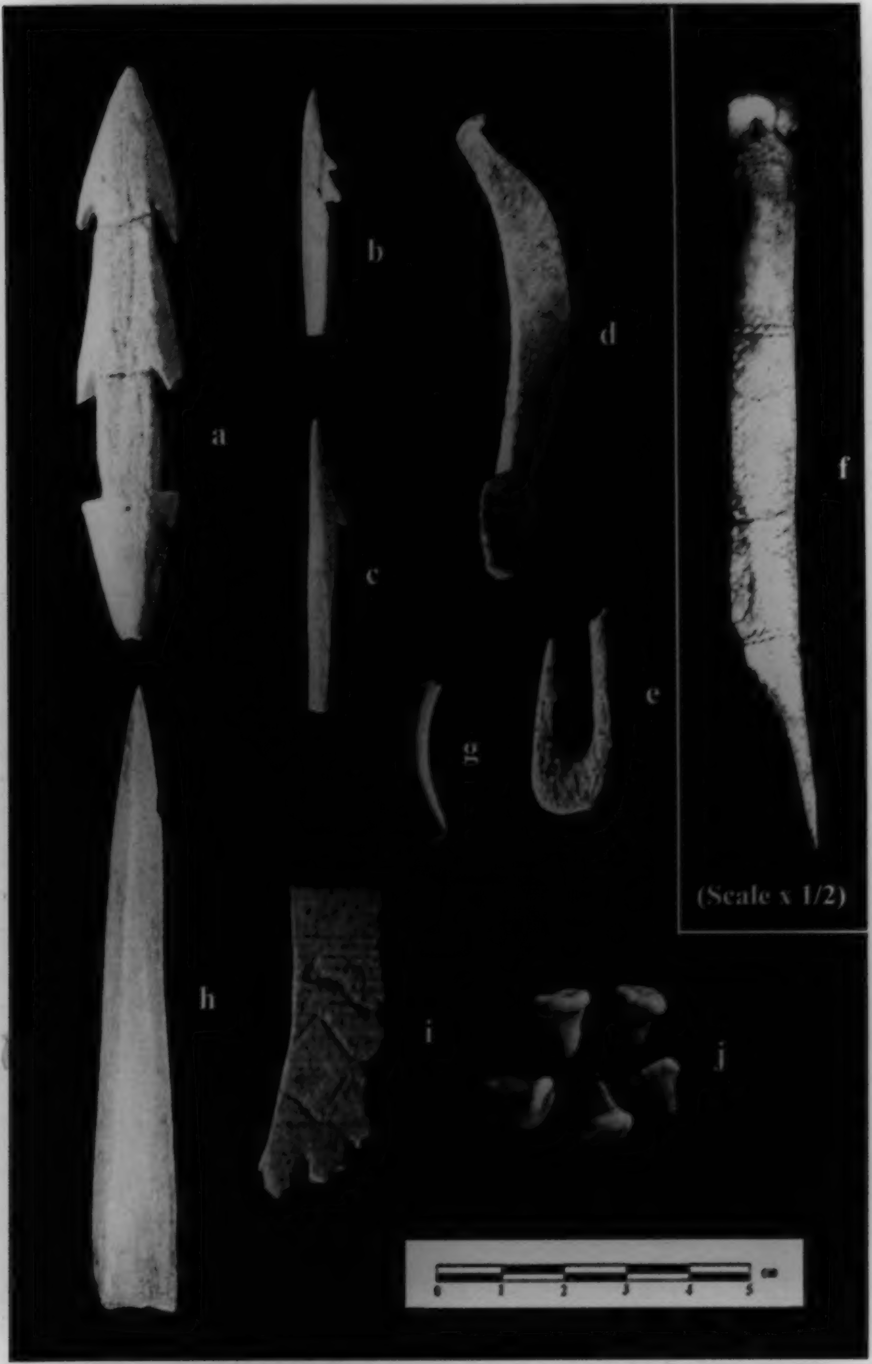

Figure 10-6: Bone, tooth and antler artifacts from Blue Jackets Creek. *a)* bilaterally barbed antler harpoon point; *b, c)* barbed bone points; *d)* bone fish hook shank; *e)* bone fish hook; *f)* carved caribou metapodial; *g)* porcupine incisor tool; *h)* bone point; *i)* decorated antler comb fragment; *j)* perforated sea otter teeth.

Despite excellent organic preservation in much of the deposits, relatively few organic artifacts were recovered. These include bilaterally-barbed harpoon heads with shouldered stems (Figure 10-6 a); channeled harpoon valves; unilaterally barbed points, some of which may have been leister prongs (Figure 10-6 b,c); fish hook and shanks (Figure 10-6 d,e); small flat combs with geometric designs (Figure 10-6 i); and a diverse range of pointed objects which probably functioned as awls, punches and needles. Shell beads and sea otter tooth beads were associated with burials, as were two caribou metapodials which were bevelled and tapered to points, and carved with a distinctive geometric motif (Figure 10-6 f).

Burials: Twenty-three burial features were excavated, containing the remains of 25 individuals. As noted above, the two-standard deviation ranges of radiocarbon dates on four of the skeletons lie between approximately 3700 and 5400 years ago. The majority of the burials were found between Levels 5 and 8, suggesting that these individuals lived contemporaneously with the main occupation of the site. Most were buried in a flexed position, interred on their right sides in shallow pit-graves. Three were buried in a sitting posture, and were covered in red ochre. One of the flexed burials was notable for having two carved caribou metapodial artifacts crossed on the chest, as well as a double line of perforated sea-otter teeth which probably edged a long garment. Three adult individuals, including both male and female, had heavy abrasion on the buccal surfaces of both upper and lower premolar and molar teeth, and it seems likely that this was caused by the wearing of large labrets of a type which is not represented in the artifact sample, nor reported from any other archaeological or ethnographic context on the Northwest Coast (Severs 1974b).

Subsistence: Faunal remains were collected following standard practices of the time. Samples of shellfish remains were collected for all levels and for significant depositional units. The shellfish remains which comprise a large proportion of the occupational debris at the site are most commonly those of butter clam, basket cockle, wrinkled purple, blue mussel, little necked clam, dire whelk, sea urchin and limpet. Less frequently represented are horse clam, Great Pacific scallop, Lewis moon snail, barnacle and chiton.

All mammal, bird and fish bones encountered during excavation were collected, and subsamples taken from all levels of the site were identified to species or genus where possible. Salmon and halibut are well represented in the fish remains, along with dogfish, flounder and sculpin. While the bones of sea otters and seals are relatively common, the few bones of sea lions and small whales were confined to the upper layers of the site. The bones of raven, eagle, loon and duck have been identified, and land mammal bones include those of dog, black bear, marten, and caribou. Some of the caribou bones appear to be outside the range of the dwarf *Rangifer tarandus dawsoni* subspecies described from the Queen Charlotte Islands, and are comparable in size to those of Barren Ground caribou. These bones may represent animals brought from adjacent mainland regions, or animals that occupied the islands prior to the initiation of the dwarfing process which resulted in the small island caribou of the recent past (Severs1975a).

The faunal remains recovered from the site suggest that throughout its occupational history the locality was inhabited through most or all of the year, and that a variety of terrestrial, intertidal and inshore resources were being exploited. The slight increase in numbers of larger sea mammal bones in the upper layers of the site may suggest a minor change in marine hunting patterns towards the end of the site occupation.

Summary: The earliest use of the Blue Jackets Creek site probably occurred at some time after approximately 5000 radiocarbon years ago. The location was then utilized either sporadically or continuously for a period of about 2000 years, and probably served as a base settlement throughout this time. It is difficult to determine the types of dwellings that may have been used at Blue Jackets Creek from the cultural features which were recorded. No evidence was found, however, of large structural elements or extensive floor deposits such as those that are associated with the archaeological remains of plank houses. The absence of large splitting adzes supports the view that plank houses, similar to those inhabited by people of the northern Northwest Coast during recent centuries, were not in use at the site.

The early occupants of Blue Jackets Creek relied on mixed hunting, fishing, and gathering, making use of most of the available food resources in the general vicinity. There seems to have been no significant change in this pattern, although there may have been a slight increase in sea mammal hunting during the later portion of the occupation.

The distribution of artifacts gives an impression of temporal continuity, with little apparent change in most artifact classes or in the relative frequency of such classes throughout the duration of the occupation represented at this site. Indications of contacts with a broader range of communities is suggested during the later period of site use, with the occasional appearance of exotic items such as obsidian and a chisel made from porcupine incisor. The occasional appearance of new classes of artifacts, such as zoomorphic clubs and ribbed or segmented stones similar to those found in the Prince Rupert Harbour sequence (MacDonald 1983: 113-115), may best be seen as indicating contact with an evolving northern Northwest Coast cultural tradition, rather than as development towards the particular culture and society of the historic Haida. There is no evidence that the contacts suggested by the presence of these artifacts had a profound influence on the way of life at Blue Jackets Creek. Rather, the site appears to reflect a remarkably stable existence which endured in the Masset Sound area for at least two millennia.

Honna River

Site FhUa-1, Honna River, lies on the southern coast of Graham Island at the mouth of the Honna River. This site contains an accumulation of over three metres of shell midden deposits, and was tested by George MacDonald in 1967 (Figure 10-7; MacDonald 1969). Two radiocarbon dates bracket the deposits: a sample of charcoal from the upper zone dated 3040 ± 100 (GaK-1870) while one from the base of the deposits overlying sterile gravel yielded a date of 3300 ± 100 (GaK-1871).

The occupation of the Honna River site was contemporaneous with that of the main occupation at Blue Jackets Creek. A very small collection was recovered from test excavations at Honna River; the few artifacts show resemblances to those from Blue Jacket's Creek. Particularly striking is a crescentic ground-stone object with serrated edge and incised decoration, identical to a specimen from Blue Jackets Creek; unilaterally barbed points and harpoon head are also similar to those from the Masset Sound site. The absence of chipped stone artifacts from the Honna River collection is likely the result of sampling error, but may reflect a lower frequency of such artifacts in the assemblage and perhaps a different local focus of activities. In contrast to the differences in the representation of chipped stone artifacts, the stylistic similarities between the two assemblages seen in the few recovered artifacts from Honna River suggest that the cultural tradition represented at Blue Jackets Creek was likely more widely distributed.

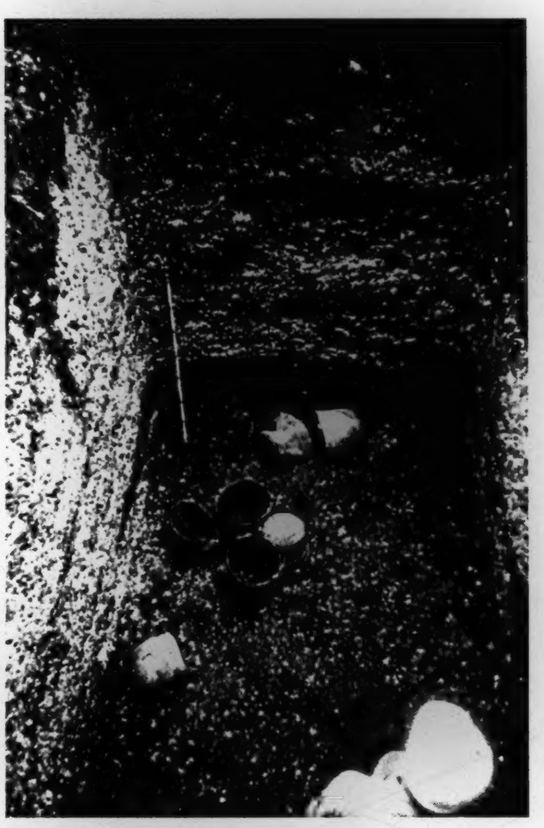

Figure 10-7: View of the test excavation in the Honna River midden (FhUa-1) (Photo: George F. MacDonald).

Tow Hill

The Tow Hill site (GaTw-5) lies on the northeastern coast of Graham Island at the mouth of the Hiellen River, approximately 30 kilometers northeast of the Blue Jackets Creek site. The local environment is quite different, as Tow Hill is in the extensive lowland area of the Argonaut Plain, and fronts on the open surf-washed coast of Dixon Entrance. Tow Hill, a remnant volcanic plug, is a significant local landmark; the name derives from a Haida term referring to plentiful food, an attribute with which the location is also associated in Haida mythology (Dalzell 1973). Edenshaw's village, Hiellen, lay on the eastern side of the river mouth opposite the site reported here.

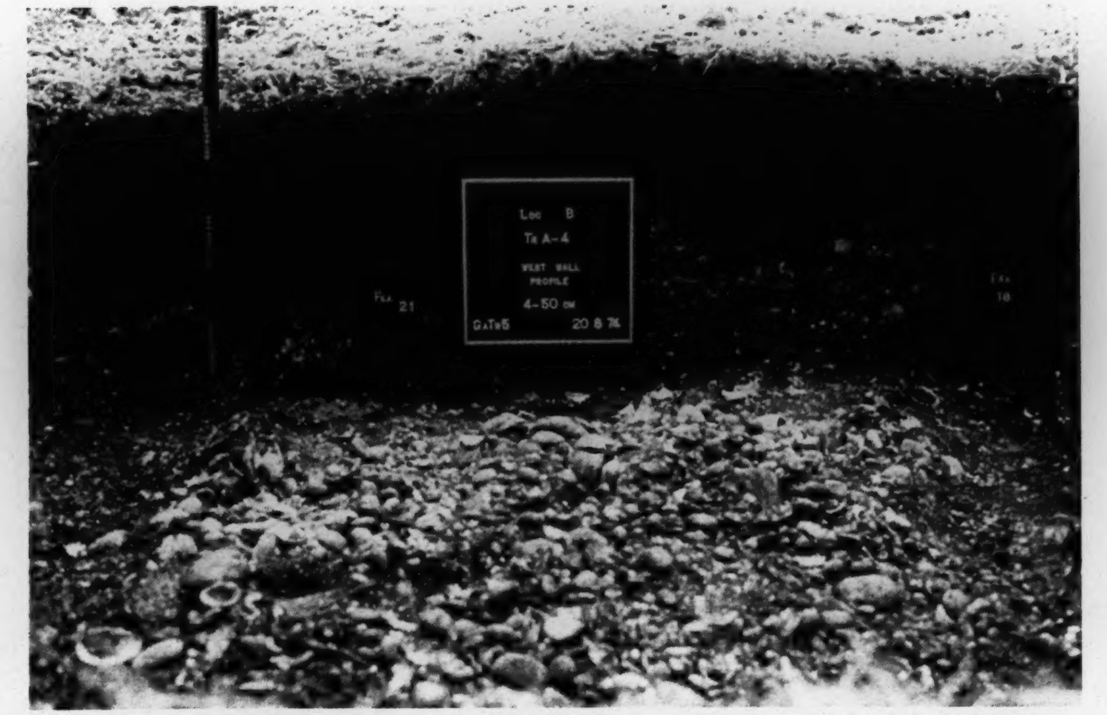

Figure 10-8: View of the shallow midden deposits at the Tow Hill site (GaTw-5).

Fladmark's 1969 survey reported archaeological material at several localities immediately to the west of the mouth of the Hiellen River, and in 1974 the site was revisited in order to obtain information with which to compare an occupation of this outer coastal location with the materialrecovered from Blue Jackets Creek on Masset Sound (Severs 1975b). An extensive scatter of thin cultural and shell midden deposits was traced for over 500 metres along the lower course of the river. Excavation was focused in an area approximately 30 metres in diameter which contained relatively concentrated deposits. This locality lies on a sloping terrace approximately 40 metres from the present coast, and at elevations of 7 to 10 metres above sea level. Twelve 2-metre squares were excavated to depths of up to 130 cm. Cultural deposits extended to a maximum depth of 110 cm but were generally restricted to a depth of 60 cm, and comprised discontinuous thin layers or pockets of shell, ash and organic materials in a matrix composed of sandy loam and lenses of sorted gravel (Figure 10-8). Over twenty features were recorded, including small post holes, shallow pits, and two hearths consisting of clusters of cobbles containing substantial amounts of charcoal. No apparent evidence of structural remains were encountered.

The most common of the 645 artifacts recovered from Tow Hill are cortical spalls struck from siltstone and other cobbles, while most of the remainder of the assemblage is comprised of flakes, cores and pebble or core tools, split and edge-battered cobbles of the same material. As in the Blue Jacket Creek assemblage, small agate nodules were flaked with a bipolar technique and retouched unifacially. Bone artifacts are limited to a few pieces of worked mammal bone, and a single bird bone awl. Bone was recovered only in association with shell deposits, and elsewhere had been dissolved by the acidic soils of the site. Identified faunal remains include salmon, halibut, seal and perhaps *cetacea*. The shellfish represented include butter clam, little-necked clam, basket cockle, wrinkled purple, razor clam, blue mussel and barnacles.

Two radiocarbon dates were obtained in order to bracket the cultural deposits. The one from an upper level returned a normalized but uncalibrated date of 2050 ± 115 (Gak-5440), while one from the base of the deposits dated 3280 ± 210 (GaK-5439). These dates suggest that the Tow Hill site was occupied contemporaneously with the major occupation at Blue Jackets Creek. A similarity between the technologies recovered in the two assemblages is apparent in the siltstone spalls, flakes and pebble core tools, as well as in the bipolarly flaked and unifacially retouched agate nodules. However some of the major components of the Blue Jackets Creek assemblage are absent from Tow Hill: adzes and adze preforms, unifacially retouched basalt scrapers and flakes; and complex stone artifacts. It seems unlikely that the difference can be attributed to preservation conditions or sampling errors. In view of the relatively thin and scattered cultural deposits at Tow Hill, as well as the absence of burials in the deposits, it seems more probable that the site can be interpreted as the remains of short-term seasonal occupations. Such occupations were likely associated with specific resource harvesting efforts, which did not require the complete range of technology represented at a site such as that represented at Blue Jackets Creek.

Definition of the Graham Tradition

As was noted earlier, the classification of prehistoric cultural traditions on the Queen Charlotte Islands was originally defined by Fladmark (1975). The major units in this classification comprise an early Moresby Tradition defined on the basis of chipped stone tools, notably a microblade industry; the subsequent Graham Tradition characterized by shell midden accumulation and a broad range of artifact classes; and a Transitional Complex. Much of the archaeological research over the past two decades on the Queen Charlotte Islands has been devoted to defining the Moresby Tradition, and in particular to identifying an earlier manifestation of that entity. It is now clear that the Moresby Tradition is rooted in an early Holocene coastal adaptation dating from at least 9000 years ago (Fedje *et al.* 1996; Fedje and Christensen 1999).

Since his original statement, Fladmark (1989) has modified his view of the Transitional Complex, which is now seen as a cultural tradition continuing over a period of several millennia and which is in part contemporaneous with the Graham Tradition. In Fladmark's (1989) view, this reflects the simultaneous existence of two distinct cultural groups, one of which maintained earlier technological traditions, while the other repeatedly accepted technological and cultural innovations based on contact with mainland societies and eventually gave rise to the culture of the Haida. The archaeological evidence presented in the current paper suggests a revision of this classificatory scheme, involving the removal of the Transitional Complex and developing a more limited temporal and cultural definition of the Graham Tradition.

Certain aspects of technology associated with the Graham Tradition sites described in this paper suggest, as Fladmark (1975) originally proposed, a derivation from the preceding Moresby Tradition. The late Moresby Tradition, as represented at the Cohoe Creek site (Ham 1990) located on Masset Inlet only a few kilometres to the south of Blue Jackets Creek, would seem likely to be ancestral to the Graham Tradition. The occupation at Cohoe Creek dates to between 5000 and 6000 years ago, and is marked by a shallow shell midden and abrasive stones for the manufacture of bone tools, together with the pebble tools and microblades typical of earlier Moresby Tradition sites. Although components assigned to the Graham Tradition lack a microblade industry, the bipolar flaking of basalt, siltstone and cryptocrystalline material suggests technological continuity with the Moresby lithic industry, as does the unifacial retouching of basalt flakes to form scraping tools. At present there is no indication of a discontinuity between the Moresby and Graham traditions.

To this technology, however, many elements had been added by the time that the Blue Jackets Creek occupation began between 5000 and 4000 years ago. Faunal remains indicate a generalized hunting, fishing and gathering adaptation based on a variety of sea and land mammals, birds and fish, and the accumulation of deep shell midden deposits suggests longer-term settlement. Artifacts appearing at this time include small pecked and ground stone celts, ground slate points, a variety of abrasive stones, barbed points or "leisters", barbed single piece harpoons, fish hook shanks, and awls.

As was noted above, utilitarian tools remained essentially unchanged throughout the 2000 or more years of the Blue Jackets Creek occupation. Faunal remains reflect the same broad subsistence base indicated in earlier levels of the site. The most significant changes seen in the upper portions of the site, and probably dating to the period between approximately 3000 and 2000 years ago, are the occasional appearance of new elements such as pecked and ground stone clubs and ribbed stones. A few other artifacts, such as an obsidian biface and a chisel made from a porcupine incisor provide clear evidence of contact with adjacent mainland populations. However, the general impression is of an insular culture and way of life which remained essentially unchanged throughout the occupational history of the site.

Although very little excavation was carried out at the site of Honna River, the results of work there suggest that the same way of life existed on southern Graham Island, and presumably over much of the habitable portions of the island or the archipelago. Contemporaneous sites such as Tow Hill and Skoglund's Landing (FlUa-1; Fladmark 1990: 189) are characterized by sparse midden development, scarcity of structural features, and specialized lithic industries which are limited to coarse stone tools and bipolar flaking of small nodules. These sites are not geographically isolated in a specific portion of Graham Island, and they are dated to the same period as the Blue Jackets Creek and Honna River occupations with which they share a bipolar lithic industry, unifacially retouched flakes and a variety of core or pebble tools. It would appear that these sites represent seasonal or task specific occupations associated with the use of a limited technology, and that they should be considered as examples of Graham Tradition sites. The alternative view espoused by Fladmark (1989)—that they represent occupation of Graham Island by a long lasting cultural tradition which was distinguished by a conservative rejection of the complex tools associated with the contemporaneous Graham Tradition people—would appear to be unparsimonious.

Fladmark (1989:211) defined the Graham Tradition as including all shell-midden sites on the Queen Charlotte Islands containing ground-and-polished stone and organic artifacts, including ancestral Haida occupation sites dating from the past few centuries. Unfortunately, very little is known of the archaeology of the Queen Charlotte Islands during the past 2000 years. Acheson's (1991) extensive work in the southern portion of the archipelago encountered a sequence of occupations characterized by a complex bone technology, but a lithic industry which was almost limited to abrasive stones and lacked the basalt tools, adzes and other elements of the Graham Tradition lithic industry represented at Blue Jackets Creek. As was pointed out earlier, there is very little similarity between the material culture of the Graham Tradition as known from the sites described above, and that of the historic Haida.

Given the evidence presented above for a coherent cultural tradition that persisted over much or all of the period between 5000 and 2000 years ago, and which is quite distinct from anything known from later periods, it seems reasonable to redefine the Graham Tradition to more closely reflect current knowledge. Such a definition would include: seasonal and task specific sites as well as those representing longer-term occupations; a distinctive lithic industry focused on the production and use of small unifacial basalt tools, cobble and cortical spall tools, and small pecked and polished adzes; an organic tool industry comprising a wide variety of types in bone and antler including barbed harpoons, leister barbs and awls; a broadly based subsistence pattern; and elaborate and distinctive burial practices.

The technology of the Graham Tradition is dissimilar in many respects from contemporaneous technologies in other regions of the northern Northwest Coast. The material described above provides no evidence to suggest the movement of populations from the mainland to the Queen Charlotte Islands, either at the beginning or at any point in the duration of the tradition. Graham Tradition lithic industries are consistent with development from earlier cultural manifestations on the Queen Charlotte Islands, and the limited occurrence of mainland materials in Graham Tradition assemblages suggests that occasional contact with mainland peoples only began at some time after about 3000 years ago. Given the evidence for widespread and well developed occupation in Prince Rupert Harbour during this period (MacDonald and Inglis 1981), it seems likely that most of this material was obtained by trade with the adjacent mainland populations. However, the sparse evidence suggests a much smaller scale of trade between island and mainland groups than that known from the Historic period.

The occurrence in the Graham Tradition of labret use, elaborate burials, complex stone artifacts and occasional objects indicating long distance trade, might be construed as markers for initial development of the way of life seen among ethnographic Northwest Coast peoples. However, as has been argued elsewhere (Sutherland 2001), such elements are not necessarily indicators of the social complexity based on ranking that characterized the cultures of the Historic period. Such evidence does no more than suggest a generalized relationship to the evolving cultural tradition of the northern Northwest Coast.

Conclusions

In this paper it has been argued that all of the archaeological assemblages currently known from Graham Island between approximately 5000 and 2000 years ago can be included in the Graham Tradition. Although future work may extend the duration of this tradition into the centuries following 2000 years ago, there is nothing at present to suggest development into the culture of the historic Haida.

This position stands in contrast to earlier interpretations of the archaeological sequence on the Queen Charlotte Islands (Fladmark 1975, 1989), which assume cultural continuity from early Holocene cultural traditions to the historic Haida. Fladmark's view is consistent with those interpretations which assume temporally deep cultural and ethnic continuity in most regions of the Northwest Coast. Carlson (1996: 217, 226) for example, derives the Haida and neighbouring Tlingit from the microblade-using peoples who occupied the northern coast before 9000 years ago, and states that "… *core* territory and *core* language features were maintained throughout later prehistory in spite of considerable acculturation and possible shifts in the peripheries of language areas."

In contrast to this general approach to understanding the prehistory of Northwest Coast peoples, MacMillan (1998) has recently identified an instance of cultural replacement in the Barkley Sound region on the west coast of Vancouver Island. Instead of the deep temporal ancestry usually assumed for the local Nuu-chah-nulth population, he demonstrates that a long-lasting cultural tradition with ties to the Salishan-speaking peoples of the Strait of Georgia was relatively recently replaced by a tradition identified elsewhere with the Nuu-chah-nulth. MacMillan (1998:15) suggests that this took place either through a process of population replacement or cultural assimilation. Given the difference between the Graham Tradition components described in this paper and more recent archaeological sequences, it would seem useful to consider the possibility that a similar event may have occurred on the Queen Charlotte Islands at some time after 2000 years ago.

Although it appears plausible on purely geographical and demographic grounds that the people of the Graham Tradition were ancestral Haida, such an assumption is not merited on the basis of archaeological evidence. The virtual absence of evidence relating to prehistoric occupations of Graham Island over the past two millennia can neither support nor refute assumptions of continuity. The relevant archaeological assemblages from the southern Queen Charlotte Islands (Acheson 1991, 1995) show no persistence of the distinctive lithic industries that characterize the Graham Tradition.

Nor does evidence from physical anthropology support assumptions of continuity. Cybulski's (2001) analysis of biological distance measured on cranial variables of eight ancient and recent populations on the northern Northwest Coast demonstrates that the burial population from Blue Jackets Creek is quite distinct from all the other groups. Although cautioning that the small size of the Blue Jackets Creek sample might yield information that was not representative for the entire population of the Queen Charlotte Islands at the time, Cybulski (2001: 137) concludes that "Possibly the most significant finding here involves the clear separation between Blue Jackets Creek and recent (historic) Haida, confirming previous suspicions based on the investigation of individual morphological characteristics (Murray 1981)."

It would seem that much of the cultural development which led to the formation of Haida culture and society as it is known from the Historic period occurred during the past 2000 years. Both archaeological and human biological evidence hints that this development may have involved either replacement or significant linguistic and cultural assimilation of the people whose archaeological remains are known from the sites discussed in this paper. The classification of prehistoric cultural traditions should allow for consideration of such a possibility.

It is therefore suggested that the Graham Tradition be limited temporally to the period between approximately 5000 and 2000 years ago. Components that date from the past two millennia, and that can be identified as ancestral Haida, might usefully be assigned to a separate cultural tradition. The antecedents of this tradition can be discussed at a time when sufficient evidence has accumulated. Until this situation exists, the assumption of Haida genetic and cultural continuity from early Holocene occupants of the Queen Charlotte Islands may be concealing a more complex and interesting culture history.

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Chapter 11: Revisiting an Old Concept: the North Coast Interaction Sphere

Introduction

In 1969, following several seasons of field work in northern British Columbia, including excavations in Prince Rupert Harbour and on the Queen Charlotte Islands, George F. MacDonald (1969) proposed the concept of an "area co-tradition" for the northern Northwest Coast. Basic to this concept was the notion that the same cultural pattern which characterized the northern coast historically, or what Drucker (1955) called the "Northern Province," was also shared by the prehistoric peoples who occupied the area.

As archaeological research progressed, this concept was replaced by that of a "north coast interaction sphere" (Fladmark 1975; Fladmark *et al.* 1990). It was thought that until approximately 3000-2500 BP cultural developments in the areas occupied historically by the Tsimshian and Haida were separate and distinct. The interaction sphere which was postulated to have been established at this time consisted of an exchange of ideas, goods and people maintained through trade, warfare, and intermarriage. It was considered that this development marked the beginning of the so-called "ethnographic pattern" on the northern Northwest Coast (MacDonald and Inglis 1981).

This paper revisits the concept of the "north coast interaction sphere" in the light of recent archaeological research and interpretation that has taken place during the past two decades.

Recent Research on the Northern Northwest Coast

The most notable development in archaeological work on the coast of British Columbia in recent years has been the elaboration of arguments dealing with the development of social complexity. Efforts to trace the origins of the "ethnographic pattern" have been a central interest since the earliest days of archaeological work on the northern coast, and indeed the concepts of "area co-tradition" and "north coast interaction sphere" were attempts to place elements of the ethnographic pattern into an archaeological context. More recently, however, interpretation has focused on the development of the central core of this pattern: the system of social ranking which was fundamental to all aspects of life on the Northwest Coast during the ethnographic period.

Social ranking is a factor which is difficult to detect archaeologically, and interpretations have generally been based on material factors which are directly or indirectly associated with social complexity. These include size of residential and community units, material markers of social status as revealed in dwellings and burials, evidence of warfare, and evidence of trade for exotic and highly valued goods which are assumed to have had an unequal distribution within a society. The use of such indirect markers has usually led to interpretations postulating the development of social ranking beginning at some time between 3500 and 2500 years ago.

While scholars working on the northern coast have been developing these interpretations, the focus of my research has shifted from northern British Columbia to Arctic Canada. This work has familiarized me with cultural sequences which share certain characteristics with those of the Pacific coast, but which have been interpreted in a much different manner. Most relevant to the present discussion is the history and traditional culture of the Inuvialuit, the occupants of the outer portion of the Mackenzie River Delta and adjacent regions of the western Arctic coast.

The Inuvialuit are the most easterly of the relatively dense Eskimo population groups which inhabit the Western Arctic. They traditionally lived in large multifamily winter houses, and summer communities which ranged up to 1000 or more people; engaged in long-distance trade involving the movement of goods between the Central Arctic and Siberia; carried out warfare with neighboring Indian and Inuit groups; and were buried in a complex fashion involving the inclusion of personal items such as labrets, sleds, kayaks and even whaling boats ten metres or more in length (Stefansson 1914; McGhee 1974). Most of these elements are those which are used by archaeologists working on the northern Northwest Coast as markers for the development of a ranked society. Yet the traditional social organization of the Inuvialuit was not based on hereditary rank; only one village was said to have had a hereditary chief (Stefansson 1914: 165-72), and this interpretation seems to have been based a rather vague knowledge of succession practices. Accomplishment in hunting and the ability to provide for family and associates was the basis for social status marked by the term *umealik*, literally a man who owned or controlled an *umiak* or whaling-boat (Stefansson 1914: 164).

The material correlates of Inuvialuit social organization show distinct similarities to those which have been used to suggest the existence of prehistoric ranked societies on the northern Northwest Coast. This leads one to suggest that if the "ethnographic pattern" in this region had been similar to that of the Inuvialuit, rather than that of the Haida and Tsimshian, the archaeological evidence would not have encouraged an interpretation of evolving ranked societies over the past few millennia.

Reconsidering the "North Coast Interaction Sphere"

The link between the concept of the "north coast interaction sphere" and the interpretation of hereditary social ranking appears to centre on evidence of trade and warfare. There seems to be general agreement that these activities are key elements in the development of social complexity throughout the region. Most of the research has focused on developments in traditional Tsimshian territory. It might be usefully complemented by a summary of what we know of the prehistoric development of trade and warfare in traditional Haida territory on the Queen Charlotte Islands.

The isolated location of Haida Gwaii, separated from the mainland for several thousand years in the past by a dangerous body of water, allows the presence of materials emanating from the mainland to be interpreted as obvious evidence of long-distance communication. The cultural sequence on the Queen Charlotte Islands goes back at least 9000 years (Fedje *et al.* 1996), and throughout that span of time retains its distinctive character in comparison to adjacent mainland sequences. The prehistory of Haida Gwaii can be described in terms of three subsequent traditions: a newly recognized but poorly understand complex of materials which begins to appear about 9200 years ago (Fedje *et* *al.* 1996); the Moresby Tradition from approximately 8000 to 5000 years ago, defined primarily on the basis of a microblade industry; and the Graham Tradition beginning about 5000 years ago and characterized by shell midden accumulation and a wide range of bone and antler artifacts, as well as both ground and chipped stone tools (Fladmark *et al.* 1990).

Evidence of contact with the mainland appears relatively early with the occurrence of a microblade fragment of obsidian from the Late Moresby Tradition site of Cohoe Creek (Ham 1990). To date, this is the only such find, and would suggest occasional and sporadic contact, rather than systematic trade across Hecate Strait during this period. In the Graham Tradition as represented at Blue Jackets Creek and beginning around 4000 years ago, contact with the mainland is evidenced by the presence of obsidian artifacts, ribbed stones which appear in Prince Rupert Harbour assemblages, and artifacts manufactured from the tissue of animals which are not indigenous to the islands, such as porcupine incisor tools (Sutherland 1980). The larger amounts and greater variety of materials suggest more contact with adjacent mainland regions at this time. Given the evidence for widespread and well developed occupation of traditional Tsimshian territory during this period, it seems very likely that most of this material was obtained by trade with mainland populations.

Long-distance trade in both utilitarian and exotic materials, therefore, has a long history on the northern coast, and began much earlier than the dates proposed by various models for the development of complex ranked society. The archaeological evidence in both the Moresby and Graham traditions, however, suggests a much smaller scale of trade than that known from the historic period. If evidence of trade is to be used as a measure of social complexity, we must suspect that the scale of the trade indicated by archaeological materials would not be consistent with the development of hereditary ranked social units.

In mainland sequences, located in areas with access to a broader range of materials, archaeological evidence of trade is more difficult to recognize. However, the scale of trade in all archaeological periods dating earlier than a few centuries ago would appear to be on a similar level to that evidenced on the Queen Charlotte Islands. In terms of trade, a "north coast interaction sphere" appears to have been developing as early as perhaps 4000 years ago, but it is unlikely that these trading contacts were carried out in the context of developing social complexity leading directly to that of the ethnographic period. The scale of trade evidenced archaeologically is more on the level which characterized the ethnographic Inuvialuit than the level of historic Northwest Coast peoples.

Archaeological evidence of warfare is another measure which has been used to postulate the type of community interactions which characterized the ethnographic period. According to Cybulski's (1999) analysis of skeletal trauma in burials from the Prince Rupert Harbour area, warfare was endemic in the period between 3100 and 1500 years ago. Archer (1992) reports the abandonment of communities in the later portion of this period, possibly related to resettlement to more defensible locations. Evidence of conflict appears significantly earlier at Namu on the central coast (Cybulski 1996). The burials from Blue Jackets Creek on the Queen Charlotte Islands show no indication of the trauma noted for adjacent mainland groups, and evidence suggesting involvement in warfare is limited to a few stone club fragments (Severs 1974). The archaeological evidence therefore suggests that warfare may have occurred at different periods, and on different scales of intensity, in various regions of the Northwest Coast. Interpreting this evidence as signalling the development of complex societies is rather problematic. Recent excavations in the Mackenzie Delta region of the western Canadian Arctic have produced evidence of inter-community violence on a similar scale among ancestral Inuvialuit (Morrison and Arnold 1994). As in the case of trade, warfare may have been a component of a developing interaction sphere, without being related to the development of ranked societies.

Burials have provided scope for further interpretation of status differentiation as a sign of increasing social complexity. On the Nass River, for example, Cybulski notes the appearance of labret use in female burials dating from approximately 1500 years ago, as a signal of continuity with the practices of the ethnographic period, and as a measure of the development of ranked society. However, the similarity in labret use should be interpreted within the context of the burial practices evidenced at the Greenville site, where burials were midden interments with no evidence of non-utilitarian grave goods, in contrast to the above-ground burials of the historic period (Cybulski 1992). Midden interments also occur at Blue Jackets Creek on the Queen Charlotte Islands, and relatively complex burial practices are evidenced as early as 4000 to 5000 years ago: these burials are accompanied by grave goods such as shell disc beads, beads of sea otter teeth, obsidian, and in one case by artifacts made from caribou metapodials incised with geometric designs. Labret wear is also apparent on the teeth of some of the individuals buried at Blue Jackets Creek (Severs 1974).

The development of complex burial practices also appears as early as 4000 to 5000 years ago at the Pender Canal site on the southern coast (Carlson and Hobler 1993). In other areas, the development appears to occur at a somewhat later date, and in each region the practice takes a distinctive form. Interaction between regions may be suspected as a means of transmitting the general ideas of burial practice, and such elements as labret use and complex burial can be seen as evidence of a "north coast interaction sphere." Yet, as in the case of trade and warfare, there is not a necessary or even probable link between these practices and the development of ranked societies. To return to the Mackenzie Delta model, it should be remembered that labrets were worn by all men in Inuvialuit society. Burials were differentiated by the nature of equipment provided for the grave, ranging from sleds and kayaks for most hunters to *umiaks* for men who had achieved the status of *umealik*.

Leaving aside for the moment the arguments relating to an interaction sphere, perhaps the most direct material evidence for the existence of complex corporate groups is that relating to the size and nature of residential units. The most revealing evidence comes from Coupland's (1988) analysis of the prehistory of Kitselas Canyon on the lower Skeena River. Here, the Paul Mason phase (3200-2700 years ago) is seen as transitional from temporary camps to permanent villages of small and egalitarian residential units. Some evidence of differentiation is seen in the Kleanza phase (2500-1500 years ago), but then there is a hiatus of some 1200 years until the historic period. Historic villages in the area were five times the size of those of the Kleanza phase, suggesting a major increase in social complexity.

In the past I have undertaken analysis of three shell midden sites located in three regions of the northern Northwest Coast: Blue Jackets Creek on the Queen Charlotte Islands, Dodge Island in Prince Rupert Harbour, and Greenville on the Nass River. All three sites provided evidence of prolonged residential use, and between them they cover the period from approximately 4000 to 1500 years ago. In none of these sites is there evidence for the type of large structures, or differentiated residential units, which characterized the ranked societies of the ethnographic period in the region (Severs 1974; Sutherland 1978, Cybulski 1992).

Summary

In recent years, the principal interest of most scholars working on the prehistory of the northern Northwest Coast has focused on the evolution of cultural complexity, and in particular of ranked society. Many of the arguments relating to this question deal with the interactions of social groups both within and between the areas inhabited historically by nations such as the Tsimshian and Haida. Evidence for the development of an "area co-tradition" or a "north coast interaction sphere" has been used to support the idea of an evolving social complexity taking place over the past 2500 or 3500 years, and leading directly to the hereditary ranked social units of the historic period.

This paper suggests that we might more closely examine the link between regional interaction, as evidenced by trade, warfare, and similar levels of burial ceremonialism, and the evolution of social complexity. As noted above, the levels of trade, warfare, burial differentiation, and even labret use, which are evident on the northern Northwest Coast throughout much of the prehistoric period, are on a scale similar to those of non-ranked peoples such as the Mackenzie Delta Inuvialuit. By concentrating on the long-term evolution of social ranking, we may be missing evidence for more complicated and more interesting processes. Working on the assumption of continuous development, and searching for a distinct point in that development which marks the appearance of ranked society, is likely not the most useful approach to understanding north coast prehistory.

Present evidence suggests that interaction between the peoples of various regions of the Northwest Coast has an ancient history, evidenced by sporadic trade extending more than 5000 years into the past. This interaction reached new levels, in terms of trade and the spread of ideas, in the period between approximately 3500 and 2500 years ago, and in some regions this development was accompanied by warfare. I would argue that the development of a "north coast interaction sphere" should be viewed as a period of dynamic change, but should not be confused with evidence for the development of ranked societies. Certainly, at the end of this period, there are no convincing archaeological indications to support such interpretations. The complex social organization which characterized the ethnographic pattern appears to be a relatively late development, and one which has not been traced archaeologically beyond the past few centuries.

Recent research reported elsewhere in this volume suggests that the prehistory of the northern coast does not appear to fit a model of smooth and continuous development over the past several thousand years, leading gradually to the cultures of the historic Tsimshian and Haida. Instead, as Maschner (1991) stated nearly a decade ago "the development of the ethnographically known Northwest Coast pattern is the product of a long and turbulent history." I would add that the elements which comprise "the north coast cultural pattern" did not develop at the same time as part of an evolving complex, but at different times and in different situations as part of an ongoing process of historical and evolutionary change. Archaeologists might usefully reassess the importance of unique events and situations in the development of specific historical traditions, rather than neglecting such events in the search for evidence of cultural patterns.

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Chapter 12: Discussion and Conclusions

The preceding chapters, most of which have been published earlier in a variety of venues, were chosen for inclusion in this treatise in order to demonstrate different facets of the approach to archaeological interpretation that was outlined in Chapter 1. The first eight (Chapters 2 to 9) examine the Palaeo-Eskimo cultural tradition in Arctic Canada, and articulate the development of a perspective which regards the study of variability as an important element in the understanding of cultural continuity and change. Chapters 10 and 11 address aspects of variability in another cultural and environmental area, the northern Northwest Coast.

In the present chapter, this body of work is briefly positioned in current archaeological discourse. Its contribution to our understanding of cultural development in archaeological sequences from Arctic Canada is examined. Finally, the efficacy of the approach that has been proposed for the interpretation of Palaeo-Eskimo history is considered in the context of another northern cultural tradition.

Variability and Evolutionary Archaeology

Most of the articles reproduced in the preceding chapters focus on the question of variability in the archaeological record, and the meaning of archaeological diversity for interpretations of culture change. The study of diversity is central to the interpretation of archaeological phenomena, but surprisingly little attention has been paid to the formal examination of this issue. The nature of variability in the archaeological record was an important focus of one of the basic texts of the "New Archaeology" movement (Binford and Binford 1968), but in subsequent decades this concern produced few significant results in the understanding of how variability relates to processes of cultural change and development. Jones and Leonard (1989:2) note that "….issues of diversity are of concern in virtually all archaeological settings, although it often goes unrecognized even today." Dunnell (1989a: 149) admits that the explanation of archaeological diversity takes us into "largely unexplored methodological ground."

Since processes of variation and selection are basic to most theories of evolutionary development, the most concentrated attention to this subject has been paid by investigators who identify themselves as working from the perspective of "evolutionary archaeology" (Dunnell 1980). Their interests centre on taxonomy and measures of diversity, based on the models of biological studies relating to evolutionary and ecological processes (Jones and Leonard 1989; O'Brien 1996; Leonard 2001). The archaeological units with which most of these researchers operate are classes of artifacts, which are conceived as corresponding to biological lineages. This analogy is based on the view that artifacts and other material cultural products can be seen as extrasomatic attributes of the human phenotype, and that these attributes are reproduced through time by a process of cultural transmission that is analogous to that of genetic heredity (Dunnell 1989b: 40-43).

Although evolutionary archaeologists view selection as being the fundamental process generating cultural change (O'Brien and Holland (1996: 191-98), there is little agreement regarding how this process works at a level beyond that of basic engineering—such as the development of optimum thickness and paste composition for the production of ceramic vessels in order to obtain maximum levels of thermal conductivity and resistance to heat shock. Despite the fact that the work on variability that has been carried out by evolutionary archaeologists has produced little in the advancement of archaeological knowledge of the past, it has created stimulating discussions on archaeological procedures, and perceptive arguments for rethinking much of the theoretical approach that has characterized the past decades in North American archaeology.

One of the instructive concepts that evolutionary archaeology has adopted from the biological sciences is the dichotomy between "essentialist" and "materialist" disciplines. Essentialist sciences can be characterized as those, such as chemistry, which study things and events that follow deterministic laws; materialist sciences, on the other hand, deal with phenomena in which change occurs not as transformation of one entity into another but through shifts in frequency between different variants of an entity. Evolutionary archaeologists note that "On one hand, much of modern evolutionary biology is clearly materialist....On the other hand, archaeology throughout most of its existence has maintained an essentialist position....The concept of archtype is not limited to objects but also includes culture areas, a host of temporal and spatial units, and sociopolitical units" (O'Brien and Holland 1996: p.181). They urge that archaeology should join evolutionary biology in focusing on variation, change, and an emphasis on historical relations. Taxonomic units such as artifact type, culture or horizon should not be envisaged as discrete and homogeneous entities, but as phenomena that exist in a state of flux and which are defined on the basis of relative frequencies of their component parts.

This proposal is particularly apt at a time of increasing concern regarding the appropriateness of the scientific models which have been the basis for most archaeological interpretation during the past decades, and of growing interest in historical models that allow scope for the effects of human agency and historical contingency in understanding variability (Hodder 1987; Last 1995; Dobres and Robb 2002).

Variability, Human Agency and Historical Contingency

The variability that has been the focus of the preceding chapters occurs at a much different level than that which has usually been discussed by the students of evolutionary archaeology. Variability between local and regional archaeological assemblages is a more complex question than are those dealing with the pseudo-hereditary variation assumed as the mechanism that produces change in artifact classes. It is also a phenomenon that is more clearly subject to the effects of human agency and unique historical events. In a summary of recent research on the importance of considering individual human agency in the production of archaeological materials, Brumfiel (2002: 253) notes that "Variation in the archaeological record is very important to an agent-centered analysis. In processual or structural archaeologies, certain kinds of variation, such as the differences among artifacts assigned to the same 'type' or the unique attributes of burials or structures, have been treated as 'noise.' Such variation was not considered suitable for analysis; on the contrary, it was regarded as hindering the definition of culturally meaningful patterns. In contrast, agent-centered approaches are founded on the premise of social heterogeneity, which can only be identified by material culture. Therefore agent-centered archaeologists are predisposed to seek out variation and explore its meaning."

In order to account for the actions of such forces, an implicit identification of archaeological assemblages and regional categories with social communities must be introduced. Such "reconstruction" goes far beyond the strict guidelines of evolutionary archaeology (Dunnell 1989b: 42-43). In fact, the introduction of social correlates of archaeological units is outside the realm of much Americanist archaeology, which prefers to deal with "culture" as a self-contained phenomenon. This predilection has a lengthy history; Willey and Phillips (1958:3) note that while "The interpenetration of social and cultural facts now seems to be taken as axiomatic….In American archaeology especially, we have tended to suppress the social aspect altogether…" Much more recently, Rindos (1996: 167) states that "We tend to look at cultural variation as literally created, in a more-or-less self-conscious manner, by culture itself (a reification) in response to environmental change…."

Objections to such perspectives have recently begun to appear in the work of archaeologists who see recognition of the individual and of social units as necessary to the understanding of past cultural change. In a particularly informative treatment of the early ceramic Stallings culture in the southeastern United States, Sasaman (2000: 148) argues that the reduction of humans to timeless "methodological individuals", whose lives are totally formed by adaptation or by cultural institutions, cannot help but result in the loss of information regarding the past. His conclusions regarding earlier studies of the Stallings culture state that "… unilineal sequences have precluded recognition of ethnic diversity; models of technological progress are at odds with historical and cultural contexts; and inferences about vessel function have wrongly assumed conformity within form. In each of the agent-free versions of Stallings prehistory, change has a life of its own, with rationality, pragmatics, and practicality being the agent, not the people." (Sasaman 2000: 160)

Allied with a movement to consider the actions of individuals and social groups as an important element in understanding the past, is a call for a greater emphasis on the importance of particular situations and events. Peebles (1998: 187) contends that for the past decades North American archaeology "has abandoned history as either method or metaphor.... In fact, with few exceptions, archaeology has developed a pronounced antipathy to history. American archaeologists have led the search for the nomothetic, the invariant covering laws of human behaviour. In doing so they have eliminated—or at least neutralized—the sentient human and human representation from the prehistoric past." Whitley (1998: 13) notes the trend to humanistic approaches in current archaeology: approaches which tend to focus on the particular rather than the general, historical contingency rather than scientific causality, and interpretation rather than explanation of the past. Sasaman (2000: 164) calls for archaeological interpretation to take the form of detailed histories or "long-term palaeoethnographies". Far from being a call to revive a traditional and obsolete culture historical approach, he insists that archaeology "seek out and explain variation that has long been shrouded by the normative and essentialist aspects of culture history."

Archaeological Interpretation and The Narrative Mode

Before turning to a discussion of the substantive matter presented in the preceding chapters, we might usefully examine a debate regarding the roles of "explanation" and "interpretation" in archaeology. As has been indicated above, current trends in archaeological thinking involve the rejection of efforts to explain the past in terms of invariant, or at least deterministic, laws of human behaviour. In place of such a paradigm, researchers are turning to the interpretation of past events within the social, environmental and historical contexts in which they occurred, as a primary goal in understanding the past. Given the complexity of the factors and processes which must be taken into account in making such interpretations, researchers are open to potential charges of subjectivity, and even of "uncritical relativism, solipsism, and perhaps nihilism: a trio to be avoided at all costs." (Peebles 1998: 183)

This problem is not unique to archaeology, but has long been realized and dealt with by historical sciences such as palaeontology. Goudge (1961:75-77) notes that historical explanations of unique events are critical to evolutionary studies; such "narrative explanations" make no reference to general laws, but deal with "something that has happened just once and which cannot recur.." Bruner (1986) has thoroughly developed the distinction between what he terms "two modes of thought, each providing distinctive ways of ordering experience, of constructing reality." On the one hand, the paradigmatic or logico-scientific mode verifies its conclusions by appealing to procedures for establishing formal and empirical proof. On the other, the narrative mode judges the success of its arguments by verisimilitude or plausibility. The paradigmatic mode of thought operates most clearly in a field such as mathematics, while narrative is most clearly understood "at its farthest reach: as an art form" in fiction (Bruner 1986: 15).

The interpretation of archaeological phenomena clearly requires a method and a position situated between these extremes. Bruner (1986: 120) notes that the creation of scientific hypotheses has much in common with the narrative mode of thought. Peebles (1998: 183-4) argues that the narrative mode has a place in the scientific study of history: "In so far as history and prehistory present temporally ordered descriptions of changes in humankind, society, and culture, then these disciplines are, by definition, involved in the production of narratives." He calls for a prehistory that is "both art and science, in which the latter is embedded in the former."

Such a stance seems appropriate to the discussion of a past that considers unique historical events, human agency reflected in the decisions made by both individuals and communities, as well as environmental adaptation and the internal dynamics of cultures. The approach to the prehistoric past that has been demonstrated in earlier chapters is thus positioned in the contemporary milieu of an archaeology that

(1) explicitly recognizes the social correlates of archaeological facts;
(2) attempts to understand the causes of variability in archaeological materials;
(3) assumes the importance of unique historical events in influencing cultural change; and
(4) accepts the narrative mode of interpretation as an appropriate means of understanding the past.

A Model for Examining Culture Change

The perspective outlined above is appropriate to the examination of the palaeontological model introduced in Chapter 1 as a device for approaching the study of variability and change in northern archaeological sequences.

The central thesis of Gould's (1989; Gould *et al.* 1987) interpretation of evolutionary process is the assertion that the "evolutionary tree" model of increasing diversity over time does not present a true picture of biological evolution. Rather, the fossil record suggests that a similar range of diversity may occur at any point in the history of a biological lineage, and that diversity may frequently be more pronounced during the early phases of that history. This hypothesis implies that adaptive selection has not been the primary directing force in biological evolution, and that the role of historical contingency has been so great that current life is comprised of "the few fortunate survivors in a lottery of decimation, rather than the end result of progressive diversification by adaptive improvement..." (Gould 1989: 304).

In examining this argument as a model for approaching the prehistory of northern Canada, it must be noted that there is no reason to assume that processes that may have functioned in the world of Cambrian marine invertebrates also operate at the level of human communities in the late Holocene. In fact, the model is equally useful for our purposes should it prove not to correctly interpret the Cambrian explosion of life forms, as has been suggested by some palaeontologists (Conway Morris 1998). Instead of serving as a source for deriving analytical methods and analogous interpretations from the palaeontological example, Gould's construct may have greater value in simply encouraging a shift in our perceptions of the prehistoric past.

The model may have particular utility in suggesting insights into the prehistory of the hunting peoples of the northern world. Our knowledge of pre-industrial human adaptations to Arctic environments encourages consideration of the historical implications of a situation in which human communities are generally small, relatively isolated, and subject to recurrent decimation or extinction. As was noted in Chapter 1, Krupnik's (1993: 225-30) analysis of northern hunting and herding cultures has characterized such communities as highly mobile; capable of rapid population increase and expansion in range of occupation; and highly vulnerable to local extinction as a result of unpredictable environmental events. In cases where adequate historical records are available, such as among Alaskan and Chukotkan Eskimo populations, he found that most members of local communities had little or no local genetic or cultural ancestry that extended more than a few generations into the past (Krupnik 1993: 216-19). Damas (2002) has documented a similar degree of fluidity among the Inuit populations of the Canadian Central Arctic prior to the establishment of permanent communities during the latter half of the twentieth century.

A specific historical example may be useful in helping to visualize the processes that have likely played important roles throughout the history of such peoples. The movement of a party of several Inuit families from Baffin Island to northwestern Greenland during the 1850s and 1860s is remarkably well documented, and most of the relevant information has been assembled by Mary-Rousselière (1991). The migration was instigated by a shaman named Qitdlaq (later known as Qitdlarssuaq, "the Great Qitdlaq") who, in order to escape expected revenge for a murder that he had committed, assembled a party of about 50 related individuals and led them northward across Lancaster Sound to Devon Island. After some seven years of living on this otherwise unoccupied island, the party again set out northwards in search of a group of Inuit that Qitdlaq had learned of from European whalers or members of a British naval expedition engaged in the search for Sir John Franklin. After two years of difficult travel, about half of the families turned back and apparently died of starvation before reaching Baffin Island. Qitdlaq and the remainder of the group crossed Smith Sound where they met and joined the small community of Inughuit (Polar Eskimos) who lived in virtual isolation in northwestern Greenland.

The arrival of the Baffin Islanders may have been crucial to survival of the Inughuit community, which had dwindled to about 100 persons as a result of periodic starvation and of infectious diseases introduced through occasional contacts with European whalers. The newcomers introduced important technological elements that had disappeared from the local repertoire, apparently through the epidemic deaths of all those capable of constructing such items: the kayak, bow, fish-spear, and domed snow-block house (Mary-Rousselière 1991: 74-76). These innovations produced a marked change in the seasonal round of activities, provided a significant increase in the security of Inughuit subsistence, and may have saved the group from extinction (Gilberg 1975 167-9).

The Qitdlaq episode was far from unique in the history of the Inuit as it is known from historical records and oral traditions. Rowley (1985) assembled information on numerous similar occurrences, precipitated by a variety of reasons ranging from local famine to a desire to visit a childhood homeland. Together, these incidents exemplify several of the elements that have been argued as significant in the interpretation of northern history: the vulnerability of local communities to extinction; the extreme mobility of local populations; the consequent importance of contact and diffusion as a means of introducing cultural change; and the importance of human agency in precipitating unique and significant historical events.

These characteristics of northern societies appear likely to function in such a way as to produce levels of diversity throughout the archaeological record that are comparable to those known from the period of ethnographic description. If consideration of the palaeontological model calls attention to the fact that diversity existed throughout prehistory, and encourages the examination of the consequences of this fact, it may serve as a guide to better understanding the nature of culture change in the archaeological sequences under discussion.

Three Questions

At the end of Chapter 1, three questions were presented as worthy of investigation in assessing current archaeological interpretations. In the following pages the extent to which the intervening chapters have shed light on answers to these questions is examined, with particular reference to the Palaeo-Eskimo tradition in Arctic Canada.

(1) Have we created speciously uniform analytical units through a process of reification? For example should archaeological constructs such as "Independence Culture" or "Dorset Culture" be considered to have spatial and temporal reality, or are they more usefully thought of as analytical categories defined on the basis of attributes assigned from numerous geographically and temporally discrete cultural units?

Chapter 2 provides background information relevant to a discussion of Arctic prehistory. A critique of the assumptions and techniques involved in correlating environmental and cultural change across the Arctic leads to a call for greater attention to local cultural sequences, and an examination of one such sequence in the Eureka Upland region of the High Arctic. The following chapter focuses on the Palaeo-Eskimo adaptation to the Eureka Upland and the adjacent Pearyland region of northern Greenland. It is proposed, based on the distinctiveness of this way of life, that broad cultural traditions are little more than stereotypes disguising a complex variety of adaptations to local environments. Consequently, it is argued that cultural categories such as Independence, Saqqaq, or Pre-Dorset must be poor reflections of past reality, and that a more comprehensible picture of past events might be based on a pattern derived from traditional Inuit societies in Arctic Canada: a mosaic of small named local groups, each sharing most characteristics with adjacent groups, and each changing along its own trajectory over time.

This image may be especially appropriate to the geographical zone under discussion in these chapters. The Eureka Upland and the adjacent Pearyland region of northern Greenland is a heavily glaciated area with coasts locked in sea ice for most or all of the year. A limited range of prey species for human subsistence are found, and the area was beyond the northern limit of Inuit habitation during the Historic period. The palaeontological model of "diversity and decimation" would seem particularly applicable to such a situation, involving small and relatively isolated communities occupying this difficult and perilous environment. However the crucial role of historical contingency predicted by this model operates in a more complex fashion among human communities, and offers several alternatives to simple decimation at the hands of an ecological lottery.

Chief among these alternatives would be contact with other groups encountered while fleeing local famine, reinhabiting an area that had been abandoned during earlier famine episodes, or exploring previously unoccupied regions. Such meetings not only carried the possibility of ensuring the survival of threatened groups, they also had the potential for introducing previously unknown elements of technology. On the assumption that cultural diversification was a consequence of the isolation of local communities, sporadic encounters of this kind could result in the spread of locally developed cultural elements, and eventually produce the widespread technological changes that occurred throughout the region, and indeed throughout the range of Palaeo-Eskimo occupation of Arctic North America.

In the case of the Eureka Upland, the changes in technology and artifact style that can be documented during the third and second millennia BC suggest that individual changes occurred at different times, and that there is no evidence of wholesale replacement of toolkits through population replacement or massive acculturation to new cultural norms. This evidence appears to be consistent with a picture of numerous small-group interactions on the pattern of the Qitdlaq episode described in the previous section. If cultural diffusion through sporadic contacts is considered the primary process of culture change in the Palaeo-Eskimo cultural tradition, then events such as the replacement of High Arctic Independence culture by Saqqaq culture originating in southwestern Greenland, or by Pre-Dorset culture emanating from the Low Arctic (Schledermann 1990: 320-326), might be visualized as resulting from statistical shifts in the frequencies and nature of such episodes.

Such a process might also be suggested to operate on the broader scale of the Palaeo-Eskimo tradition in the eastern Arctic. The appearance and expansion throughout much of Arctic Canada and adjacent regions of the complex of traits that is recognized archaeologically as Dorset culture, might be more profitably investigated from this perspective rather than exclusively from those of environmental adaptation (McGhee 1996) or internal cultural dynamics (Maxwell 1976).

Other aspects of cultural diversity in the Palaeo-Eskimo tradition are examined in Chapters 4 to 6. These investigations of art and architectural remains address aspects of culture that are generally ignored in archaeological discussions of prehistoric hunting peoples. Archaeology is traditionally wary of art and symbolic representation as reservoirs of information on past cultures, considering the subject matter too complex to be investigated by reliably objective means. Aside from a wide array of approaches attempting to interpret rock-art, and documentation of the meaning of ethnographic art (Hodder 1989), most studies have been confined to analyses of the concept of "style" (Conkey and Hastorf 1990). The preservation of numerous small sculptures in Palaeo-Eskimo assemblages, however, has persuaded several archaeologists and art historians over the past half-century to attempt interpretations of Palaeo-Eskimo art.

It has been argued elsewhere (Sutherland 1997) that at least some forms of Palaeo-Eskimo artistic production carry accessible information about the societies that produced it, and that the overtly subjective nature of artistic appreciation should not stand in the way of other analytic approaches to this material. For example, the study quoted here presented a quantitative analysis indicating statistically significant differences in the representation of various prey-species over time, and suggesting that archaeologists might usefully search for evidence of related changes in patterns of subsistence. One of the interpretations that was proposed on the basis of changes in the frequency of representation in a local pattern of Dorset art was, in fact, supported by zooarchaeological analysis of site remains (Murray 1996).

The papers reprinted in the present volume explore other dimensions of variability in Dorset art. Questioning the view that Dorset art is a unitary phenomenon (Swinton 1967; Bronshtein and Plumet 1995), these articles note significant variability which occurs along several axes. Temporal and regional variation have been previously demonstrated, but these papers also note factors that seem to apply to specific assemblages, as well as remarking on a significant degree of diversity within individual assemblages. Such diversity would be consistent with the model previously developed for Palaeo-Eskimo society, comprising a mosaic of local communities developing their own distinctive variants of the Palaeo-Eskimo tradition. The artistic production associated with any assemblage would be conditioned by the way in which individuals within the local community interpreted the broad conventions of the Dorset cultural tradition, as well as by the nature of activities which were carried out at the particular site.

The factor linking individual examples and assemblages of Dorset art is the core of shamanic belief and world-view with which most artistic production appears to have been associated. In Chapter 6 a similar nucleus of symbolically-linked features is postulated as characterizing Palaeo-Eskimo architecture: the "box-hearth /midpassage /longhouse complex." It is suggested that the symbolic content of this complex serves to trace historical events on a scale larger than the local region, since the complex persists despite the substantial amounts of variability that are apparent in other attributes of Palaeo-Eskimo architecture which can be related to local and situational factors. The temporal history of this architectural complex involves structural change, regional disappearance and re-emergence, and the wide geographic spread of newly developed variants. It is argued that this picture is consistent with the perspective on Palaeo-Eskimo society advanced in the previous chapters, and with the view of Arctic societies as characterized by frequent local extinction and equally frequent dispersion and expansion into new regions.

To refer once again to the model of high diversity and frequent decimation, the process of change in the Palaeo-Eskimo cultural tradition may demonstrate the same fractal (self-similarity at different scales) character as that postulated for patterns of diversity in biological lineages (Gould *et al.* 1987: 1440). It is likely that the early Palaeo-Eskimo Independence tradition survived in the extreme High Arctic for several millennia despite the probability of frequent extinctions of local groups. The long-term survival of culture elements in such a situation would not have been dependent on the continuous survival of all local groups or of particular groups. Rather it would have required only that some local communities survived during each particular period of time over the duration of the tradition, and their unique variants of the cultural tradition subsequently developed through population expansion and through contact with other peoples.

The evidence from architecture suggests that a similar pattern might operate on the much wider scale of the Palaeo-Eskimo tradition in Arctic North America. Cultural continuity—as seen in the long-term survival and modification of core elements like the architectural complex dealt with here, or of the shamanic-based artistic tradition considered earlier—occurs on the level of a broadly dispersed society composed of individual communities which each carry a unique variant of that tradition through a certain period of the tradition's existence. The Palaeo-Eskimo tradition as it existed in High Arctic Late Dorset communities during the first millennium AD, for example, had no direct local ancestry but had been brought to the area from the south after the High Arctic islands had apparently been abandoned for several centuries. It can be argued that, as was the case discussed earlier regarding technological change in the Independence tradition, contact with other peoples and the diffusion of cultural concepts has also been important in the development of Palaeo-Eskimo art and the world-view with which it is associated. As was noted in Chapter 5, the Palaeo-Eskimo world-view can be most probably interpreted as a palimpsest of layered beliefs deriving from Siberian origins, contacts with northern American Indian groups, the evolving cultural traditions of Eskimo Alaska, and perhaps others.

In summary, the shift of perspective that has been proposed in order to accommodate a model of early prehistoric diversity, allows us to suggest a process which plausibly accounts for the technological and cultural changes apparent in the archaeological record pertaining to the early Palaeo-Eskimo tradition in the High Arctic.

(2) Have we created illusory lines of ancestry-descent, based on the assumption that biological and cultural continuity was the normal situation among prehistoric northern peoples? Conversely, have we employed questionable assumptions regarding the interpretation of the past through the use of direct historical approaches and analogical reasoning?

The previous section discussed the tendency among archaeologists working in northern Canada to reify units of cultural classification, and to neglect the recognition that such units are comprised of numerous small communities with distinctive local cultures and unique trajectories through time. It was also noted that such communities are vulnerable to extinction as a result of processes involving environmental factors, human agency and historical contingency. The "fractal" character of this process was also observed, on the basis of evidence suggesting the abandonment of entire regions of Arctic

Canada and the later re-occupation of these regions by groups with distinctly different variants of the cultural tradition.

The occurrence of such historical episodes may be obscured by our previously-noted tendency to think in terms of large-scale cultural classificatory units. Assumptions of cultural continuity may also have been influenced by the interest in cultural process rather than in historical events which has dominated archaeological thinking during the past decades. The assumption of continuity, in some cases leading directly to peoples and cultures of the Historic period and the present world, also has implications for archaeological interpretation through the use of analogy and the direct historical approach to understanding the past. If historical discontinuities have occurred among northern cultural traditions at a significantly higher rate than we have usually assumed, greater care must be taken in selecting truly analogous comparisons rather than those based on assumed direct historical continuities.

Considerable discussion has been undertaken regarding the utility and weaknesses of the analogical approach to archaeological interpretation, especially in association with ethno-archaeological research and the development of middle-range theory that proliferated as part of the New Archaeology (Binford 1978, Gould and Watson 1982, Wylie 1985). If one rejects the existence of invariant or deterministic laws governing human behaviour, the strength of an analogy is proportional to the degree of cultural or natural connections that can be drawn between the two cultures compared. In the discussion regarding Question 1, the analogy that was developed between Palaeo-Eskimo societies and those of the traditional Inuit of Arctic Canada is based on the similar subsistence patterns and parallel environmental constraints imposed by occupation of the same geographical and environmental area.

A stronger analogy would be based on an argument of actual cultural continuity between the two societies. Such continuity has often been assumed as the basis for interpreting Palaeo-Eskimo culture, and in particular Palaeo-Eskimo art, in terms of the religion and world-view of traditional Inuit society (Swinton 1967, Taylor 1967, LeMoine *et al.* 1995). The reverse analogy is widely drawn by the contemporary Inuit art industry, which places the commercial artistic production of today in a tradition that extends several millennia into the past. Although aware of the potential problems involved in drawing analogies between Inuit and Palaeo-Eskimo societies and ideologies, archaeologists continue to utilize such comparisons as a basis for interpreting elements of Dorset art, architecture and social organization (cf. LeMoine 2003).

However, as was pointed out in Chapter 5, archaeological evidence currently favours a view deriving the Palaeo-Eskimo and Inuit cultural traditions from distinctly different origins. Archaeology has been unable to trace any significant Palaeo-Eskimo cultural influence on the ancestral Inuit who replaced them in Arctic Canada and Greenland (Park 1993, 2000), while recent research on aDNA recovered from Palaeo-Eskimo and Inuit skeletons indicates possible biological continuity only in one isolated local population, the Sagdlermiut of Southampton Island (Hayes *et al.* In press).

Although there is no archaeological support for the interpretations of Palaeo-Eskimo art that are commonly derived from the beliefs and worldview of the historic Inuit, more direct relationships may exist between Palaeo-Eskimo beliefs and those of historic Siberian peoples. However, a more important point developed in Chapter 5 relates to assumptions that the religion and worldview of the Inuit, of northern Siberian societies, and of other ethnographically-described peoples, were part of ancient and immutable systems of beliefs. The archaeological preservation of Palaeo-Eskimo sculptural art over a period of several millennia provides a unique historical perspective on the belief system of a northern people. The temporal variability seen in the artistic production may reflect similar levels of change in the religion and worldview of the people who produced the art. As was noted above, the world-view of the Palaeo-Eskimos is more likely seen as a system of beliefs and perspectives derived from several sources through historical contacts, and subsequently modified through the complex processes of human agency and the chance of local survivals.

The answer to the question posed at the beginning of this section appears to be in the affirmative. Despite the accumulation of archaeological evidence indicating distinct origins for the Palaeo-Eskimo and Inuit cultural traditions, and for an absence of significant cultural exchange between these traditions, archaeologists and art historians continue to use analogical arguments in interpreting various aspects of Palaeo-Eskimo culture and ideology on the basis of those of the Inuit. The neglect of evidence relating to cultural discontinuity may be based, in part, on a vigorous archaeological interest in processes of culture change driven by adaptation and cultural dynamics within long and uninterrupted traditions.

(3) Have we allowed assumptions regarding cultural uniformity, and the unimportance of historical contingency as a process influencing cultural change, to obscure the evidence for cultural contacts that were of consequence in the history of northern peoples?

An archaeological perspective centred on systematic cultural process, rather than historical contingency and human agency, naturally devalues the importance of cultural diffusion as a means of introducing change into local sequences. Most Americanist archaeologists of the past half-century would seem to have agreed with Steward's (1955: 42) opinion that "Cultural diffusion, of course, always operates, but in view of the seeming importance of ecological adaptations its role in explaining culture has been greatly overestimated." Consequently, evidence that important diffusionary episodes have occurred may have been neglected, or not even recognized, in the archaeological record.

Hickey (1984) presents a particularly appropriate example of such disregard, relating to the culture and society of the historic Copper Inuit of the Central Arctic. In a carefully analyzed case study, he traces the ramifications for Copper Inuit society of an "accidental" external event: the discovery of a cache of materials and supplies abandoned by the crew of the Franklin Search ship *H.M.S. Investigator* on northern Banks Island in 1853. Hickey concludes that many of the distinctive cultural and social characteristics of the Copper Inuit were not formed as the result of long-term adaptation to their natural and social environment, but were a consequence of a cultural transformation in response to this recent event.

The proposition that external contacts may have been influential in the development of Palaeo-Eskimo culture is discussed in relation to two sets of recent discoveries from Arctic Canada. The first example is that of the Choris-related Satkualuk site in the Mackenzie Delta region of the western Arctic, described in Chapter 7. This site documents the potential existence of previously unsuspected cultural links between Alaska and Arctic Canada. Such links are of particular interest during the period when the Palaeo-Eskimo tradition in the latter region was rapidly changing and developing into what is known as Dorset culture. This transformation occurred during the centuries around 2500 years ago, which is also the approximate time period assigned to the poorly-dated Choris episode in Alaska. Several elements which are reminiscent of Alaskan technologies are associated with the development of Dorset culture: the appearance of ground chert tools, polished slate blades, a greater emphasis on the hunting of sea mammals, and increased use of oil lamps for light and heat. Writing in the late 1950s, Taylor (1968: 103) suggested an Alaskan influence on the origins of Dorset culture as a plausible hypothesis for future investigation. However, the geographical gap of approximately 1500 kilometres between Alaska and the most westerly Dorset occupations in Arctic Canada seems to have supported the predisposition of later twentieth century archaeologists to ignore diffusion as a significant process in culture change. Most researchers have considered Dorset culture to be an entirely indigenous development, either stimulated by adaptation to environmental change or through the internal dynamics of the cultural system (Maxwell 1985: 121-2).

The Lagoon site on Banks Island (Arnold 1981) and the Crane site on Cape Bathurst (LeBlanc 1994) suggest that at the time of Dorset culture development the western Canadian Arctic supported a cultural variant displaying traits reminiscent of both Canadian Palaeo-Eskimo and Alaskan cultures. The Satkualuk site, located approximately midway between the relevant known occupations of Alaska and Arctic Canada, may provide a context for understanding these isolated components as a potential link between the Palaeo-Eskimo tradition of Arctic Canada and Choris or Choris-like cultures of Alaska. Archaeologists may perceive the Palaeo-Eskimo tradition as being among the most geographically isolated on earth. However, these perceptions should not blind us to the possibility that contacts with other cultures have occurred and may have been important in stimulating local cultural developments.

Chapter 9 documents the discovery of a second example of contact between Dorset culture Palaeo-Eskimos and another people, in this case early Europeans. The background to this discovery is presented in Chapter 8, which summarizes the archaeological perspective on Norse-Native contact that was current during the late twentieth century, prior to the discovery of the material and formulation of the hypothesis presented in the following chapter. This summary is also relevant to earlier discussions of the complexity of historical episodes as stimulants of cultural change. The initial contact between native North Americans and Europeans appears to have resulted in three quite distinct sets of relationships that were shaped by the conditions under which contact occurred. The archaeological evidence recovered during the past half-century contradicts the historical records, which are limited to accounts of rare aggressive contacts between the Norse and a people whom they knew as "Skraelings," and it suggests that a more complex and nuanced set of events occurred during the centuries of Norse occupation of the northwestern Atlantic.

This point is substantially developed in the following chapter, which was written shortly after the article reproduced in Chapter 8, and which reports on the discovery of archaeological evidence that significantly changes the conclusions reached in that chapter. It is apparent from the material presented in the "Addendum" to the original paper that this was a work in progress, and in fact current research continues to compile additional evidence in support of the views presented here (Sutherland 2002, 2004).

For the purpose of the current discussion, the significance of this discovery is not that it changes our views on Norse-Native contact and may explain some of the variability that has been noted in assemblages ascribed to the Dorset culture. Rather, the relevance lies in the fact that the discovery was made in museum collections from sites that had been excavated over several decades by several leading investigators, and which had been examined by numerous other researchers. Mary-Rousselière noted the unusual character of several finds recovered during his 1970s and 1980s excavations of house N73 at the site of Nunguvik, and had a number subjected to material analysis and dating (Mary-Rousselière 2002:100, 105, 107-9); he suggested, however, that the objects most diagnostic of European contact had been accidentally introduced to N73 at a later time (ibid.: 44). Maxwell (1973: 155-234) noted several unusual characteristics of the architecture and artifacts recovered from the Nanook and adjacent Morrison and Tanfield sites excavated during the 1960s on southern Baffin Island. In the case of one complex repair to a soapstone vessel, for example, he noted that the flanged patch "would have been a credit to a modern tinsmith" (Maxwell 1985: 149). However he appears not to have considered the possibility of a non-Dorset association for this material. Jordan (1980) had the cordage which was recovered from his 1970s excavations at Avayalik Island analyzed by a fibre expert, but no European association was made. When similar material was recovered from the Willows Island Dorset site on Baffin Island, Odess (1996) compared his finds with those described in earlier reports as unquestioned elements of Dorset technology.

In the case of these researchers, and of others who examined the material while it was stored in museum collections over the past three decades, the assumption that

Palaeo-Eskimo culture developed in isolation appears to have effectively negated consideration of outside contact or influence. To be fair to these researchers, the possibility of a European connection was obscured by an inadequate knowledge of the sequence of Dorset cultural development as well as, in some instances, by confusing radiocarbon measurements associated with the assemblages under discussion. On the other hand, a closer examination of these assemblages continues to accumulate evidence suggesting that relations between early Europeans and the Dorset people of Baffin Island and Labrador must have been substantially more complex and of greater duration than that which has been documented between Norse and either Indians or Inuit.

It is also becoming increasingly apparent that these relations may have had an appreciable influence on the technology and perhaps on other aspects of the culture of Dorset societies in the eastern Arctic. Finally, it provides a possible explanation for the subsequent and yet unexplained disappearance of the Dorset population (Stenton 1994; Herbert Maschner, personal communication 2000). The potential effects of epidemic disease, contracted through exposure to Europeans, might usefully be explored as a hypothesis elucidating the intriguing disappearance of the Palaeo-Eskimo population from the eastern Arctic, a disappearance that until now has been unconvincingly associated with the immigration of ancestral Inuit from Alaska.

The evidence related to contacts between the Palaeo-Eskimos of Arctic Canada and other societies opens new avenues to the exploration and understanding of historical events that impinged on their society and influenced their way of life. One could argue that the delay in recognizing this evidence has been associated with an archaeological perspective that privileged adaptive cultural processes over historical contingency as significant causes of cultural development.

An Application of the Model of Diversity and Contingency to the Northern Northwest Coast

The previous pages have examined whether assumptions concerning cultural homogeneity and continuity have impaired our understanding of various aspects of the Palaeo-Eskimo cultural tradition. The current section attempts to determine whether our interpretation of developments in a different cultural and environmental region, the northern Northwest Coast, have also been hindered by prevailing models of interpretation. The material presented in Chapters 10 and 11 serves as a basis for this discussion.

Arctic peoples may not have been the only societies characterized by significant levels of mobility, a potential for rapid growth, and vulnerability to environmental or historical accident. To a more limited extent, these qualities may also have characterized past hunting populations occupying more temperate northern regions. Tuck and Pastore (1985) present evidence attesting to the repeated extinction of past human populations in Newfoundland, and suggest that island populations are particularly vulnerable to these occurrences. On the Queen Charlotte Islands, Henderson (1972) documents the series of events which resulted in the post-contact decline of the Haida population from an estimated 10,000 (possibly 14,500, as estimated by Boyd (1990:136)) in 1774 to 600 in 1915, and the abandonment of most of their settlements. Although these events are directly attributable to the effects of European contact, it seems not unlikely that occasional pre-contact episodes of famine, disease or ethnic strife may have had significant consequences for individual settlements and local populations, if not for the entire archipelago. Boyd (1990: 135-7) discusses shellfish poisoning, famine induced by occasional or long-term cyclical failure of critical food supplies, and territorial warfare as potentially important causes of prehistoric mortality on the northern Northwest Coast.

The standard classification of the archaeological sequence on the Queen Charlotte Islands is based on the supposition that the cultural ancestry of the indigenous Haida extends far into the local past. Thus the Graham Tradition as defined by Fladmark (1975, 1989) encompasses archaeological remains dating from the first appearance of shell middens between 5000 and 4000 years ago to those of the Haida at the time of European contact. The primary site from which the Graham Tradition is known is Blue Jackets Creek, a deep shell midden site dating between approximately 4500 and 2000 radiocarbon years ago, which is described in Chapter 10, together with related sites. On the basis of this evidence, it is proposed in this chapter that the definition of the Graham Tradition be restricted to archaeological remains contemporaneous with Blue Jackets Creek and the other sites described.

The picture of Haida ancestry is obscured by the lack of archaeological research that has been undertaken on Graham Island, and the consequent dearth of evidence relating to the archaeological record over the past 2000 years. This deficit is partially compensated for by information from the more southerly of the Queen Charlotte Islands (Acheson 1991, 1995), and the following arguments are made on the assumption that similar developments occurred throughout the archipelago.

There is little resemblance between the artifact assemblages from sites contemporaneous with Blue Jackets Creek and those from the past two millennia investigated by Acheson (1991) and thought to be ancestral to the Haida cultural tradition. Most of the classes of stone tools that are characteristic of the Graham Tradition do not continue into these assemblages. The remains from Blue Jackets Creek provide evidence for a form of art which is stylistically distinct from that of the Haida. Tooth abrasion on burials from Blue Jackets Creek suggests the wearing of buccal labrets, which are not known to have been used among the Haida or indeed elsewhere on the Northwest Coast (Severs 1974). As noted in Chapter 10, Murray (1981) and Cybulski (2001: 137) found that both the cranial and infracranial characteristics of the Blue Jackets Creek burials were different from those of the recent Haida population.

The relative geographical isolation of the Queen Charlotte Islands should not imply an assumption of cultural continuity which is not evident in the archaeological record. A historical perspective that recognizes the importance of unique events, and of processes that are not clearly tied to environmental adaptation or internal cultural dynamics, might suggest the likelihood that traditional Haida culture owes much of its content to introductions from adjacent areas during the past two millennia.

Archaeological evidence from Blue Jackets Creek indicates that occasional contact with peoples of the adjacent mainland was occurring prior to 2000 years ago, suggesting that opportunities existed during later centuries for the introduction of significant change through contact with mainland populations. Maschner (1991; 2000; Ames and Maschner 1999) has accumulated data regarding significant increases in settlement size on the northern Northwest Coast beginning about 1500 years ago, followed about 800 years ago by the construction of fortified settlements and about 600 years ago by widespread abandonment of villages in southeastern Alaska and perhaps in adjacent regions. Moss and Erlandson (1992:85) postulate significant population movements among the Tlingit of southeastern Alaska and neighbouring peoples, associated with warfare and the construction of fortified settlements in the period beginning approximately 1000 years ago. If the developing maritime proficiency of the inhabitants of the Queen Charlotte Islands permitted significant contact with the mainland during part or all of this period, it seems likely that they were not unaffected by the turbulent history of the region.

We might also consider the possibility that more distant contacts may have occurred, as suggested by Callaghan's (2003) recent simulation-based assessment of probabilities relating to accidental drift voyages from Asia having reached coastal British Columbia. This research indicates that the western coast of the Queen Charlotte Islands is a frequent termination point for simulated voyages by disabled merchant ships of the type used in Japan for the past 2000 years. The potential cultural consequences of epidemic disease through chance contact with the surviving crew of such a voyage, and the subsequently augmented importance of replacement cultural elements obtained from other sources, is illustrated in the case of the High Arctic Inughuit described earlier.

The question of cultural continuity is further examined in Chapter 11, which takes the form of a critique of efforts to trace the origin of the social complexity that characterized the northern Northwest Coast during the Historic period. It is argued that much of the archaeological evidence that has been used in support of the early existence of the Historic Pattern is based on the imprudent use of analogical interpretations. This problem in the archaeological interpretation of prehistoric Northwest Coast cultures has also been noted by Moss and Erlandson (1995: 29), who point out that "… our mode of argumentation can lead to reconstructions of prehistory which reflect merely a generalized portrait of ethnographic culture. Along the way, local historical processes are obscured, precluding the development of alternative and multiple versions of the past." In some cases—such as that of the Graham Tradition discussed above—assumptions of direct cultural continuities extending from the Historic period into the ancient past may not be warranted.

As an exercise in exploring the implications of analogical interpretation, Chapter 11 notes that the facts cited in support of the early appearance of complex social organization based on hereditary status—evidence of long-distance trade, warfare, differential burial practices, the use of labrets as social markers—also apply to the archaeological remains of Inuit societies such as the Mackenzie Delta Inuvialuit, a people who shared many cultural characteristics with the Eskimo cultures of Alaska. The Inuvialuit lacked the complex patterns of hereditary rank that characterized the historic peoples of the northern Northwest Coast, yet they participated in trade, warfare, and the social and material recognition of outstanding secular and religious leaders. It is argued that if we do not assume cultural continuity from the Graham Tradition and its contemporaries to the Historic peoples of the northern Northwest Coast, then the Inuvialuit might serve equally well as a model on which to base a reconstruction of early social organizations in the area.

This section has attempted to determine whether a perspective on cultural change that had been derived from the examination of the Palaeo-Eskimo societies of High Arctic Canada might be of use in interpreting developments on the Queen Charlotte Islands. The degree of social, cultural, and environmental disparity between Palaeo-

Eskimo and historic Haida societies would seem to be so extreme that a model constructed in reference to one would not appear to be directly applicable to the other. However, we have noted that significant social and cultural differences should also be recognized between the historic Haida and the people of the Graham Tradition, whose society might be more suitably modeled on that of the Inuvialuit. If we accept the appropriateness of this analogy between early Northwest Coast societies and an Arctic hunting people, albeit a more populous and technologically efficient people than the Palaeo-Eskimo societies of the High Arctic, we may be more inclined to recognize the utility of applying the interpretations developed earlier in this discussion.

The perspective advanced in relation to the Palaeo-Eskimo tradition may thus provide useful insights for the interpretation of cultural traditions which developed in northern regions as environmentally and culturally different as the Queen Charlotte Islands.

Summation

The central theme of this dissertation has been the importance of understanding the nature and meaning of variability in the archaeological record. It has been argued that past archaeological perspectives, dominated by an emphasis on adaptation and cultural dynamics as the primary processes producing culture change, have minimized the recognition of variability and devalued its explanation as an important factor in understanding the past.

As an aid in shifting this perspective, it has been proposed that a heuristic model might be usefully borrowed from the field of palaeontology. This model assumes that prehistoric populations were characterized by a high degree of diversity, and that the effects of historical contingency were central to the changes that took place in prehistoric cultural sequences. It was argued that the model may be particularly appropriate to the understanding of northern cultural sequences, which are associated with societies characterized by rapid population growth, high mobility, and vulnerability to local decimation or extinction. In adapting this model to archaeological use, it was noted that historical contingency operates on human societies not only through unexpected and occasional environmental events, but more importantly through the effects of human agency: individual decisions, community choices, and the nature of contacts with other social groups. Acceptance of the importance of these variables requires an archaeological perspective that recognizes the social correlates of archaeological facts, and adopts a narrative mode of interpretation as an appropriate means of understanding the past.

This perspective has been brought to bear on the examination of a series of archaeological questions related to the prehistoric cultures of northern Canada, in particular the Palaeo-Eskimo tradition of the Arctic regions and the early traditions of the northern Northwest Coast. These instances have demonstrated that:

(1) a model of early prehistoric diversity suggests a process which plausibly accounts for the technological and cultural changes apparent in the archaeological record pertaining to the early Palaeo-Eskimo tradition in Arctic Canada;

(2) assumptions of cultural continuity, based in part on an archaeological interest in processes of culture change driven by adaptation and cultural dynamics in uninterrupted

cultural traditions, seem to have been associated with the imprudent use of analogical arguments in interpreting the early cultures of both the Arctic and the northern Northwest Coast; and

(3) an archaeological perspective that has privileged adaptive cultural processes over historical contingency as causes of cultural development, may be implicated in the delayed recognition of evidence related to significant culture contact situations.

It seems likely that this set of statements applies to a much broader range of historical situations than those considered here. For example, the perspectives and arguments made in this treatise are currently being replicated in the debate, stimulated by the recent discovery of the Kennewick Man skeleton, regarding the ancient origin of aboriginal American populations. The paradigm of a single founding population of big-game hunters ancestral to most American Indians is being replaced by a picture of original diversity involving alternate routes of immigration, varied patterns of subsistence, and diverse genetic characteristics (Dixon 1999, Chatters 2001). The arguments questioning past assumptions regarding initial uniformity, continuity between original and more recent populations, and the roles of environmental adaptation and genetic evolution as the sole explanatory factors in the development of later aboriginal populations, run parallel to those that have been developed in the various chapters of this dissertation.

In conclusion, it must be pointed out that the arguments developed above do not require the abandonment of the methods and theoretical perspectives that have characterized much of Americanist archaeology in past decades, nor do they demand a return to the cultural historicism of an earlier period. Rather, the approach to which this work aspires involves the acceptance of a more eclectic methodological outlook and a commitment to research directed to the understanding of local sequences and situations. While recognizing the significance of environmental adaptation as important to the long-term patterns of cultural development, this approach also acknowledges the importance of human decisions and unique historical events in influencing the direction of cultural change.

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